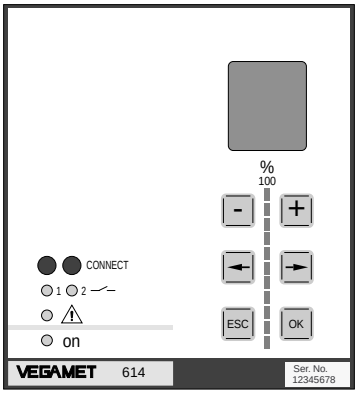
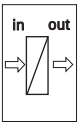
Level and Pressure

# Operating Instructions

## VEGAMET 614



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# 1 Product description

## 1.1 Function and configuration

VEGAMET 614 is a signal conditioning instrument for a number of different applications, e.g.:
- level measurement
- gauge measurement
- process pressure measurement
- etc.

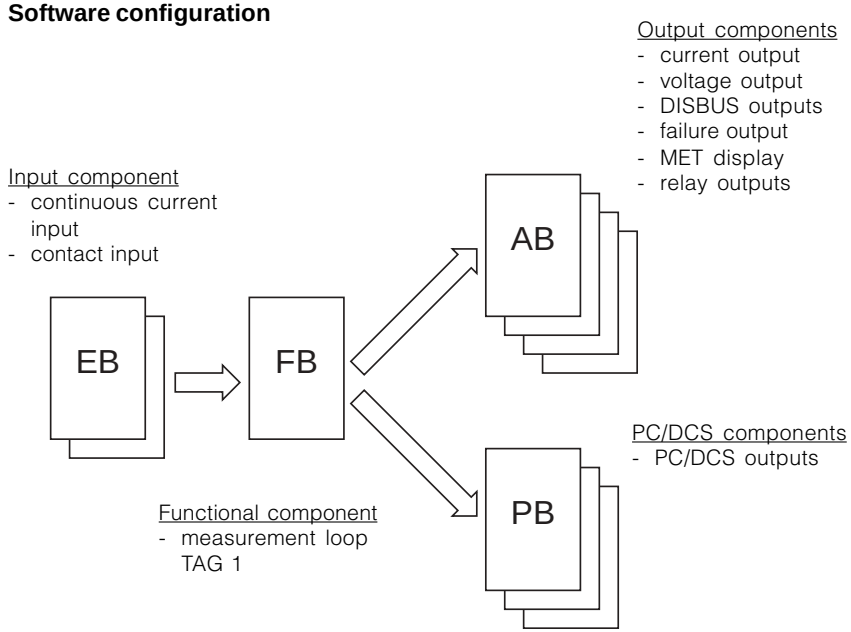
### Function

The signal conditioning instruments power the connected sensors and process their analogue measuring data. The conditioning is done by a special software consisting of functional components (FB), input components (EB), output components (AB) as well as DCS components (PB).

### Configuration

The VEGAMET 614 signal conditioning instrument is a module unit with plug-in socket. The front plate contains an adjustment module with LC display and keys.

### Software configuration



## 1.2 Approvals

### Ex approval

As an accessory, intrinsically safe instrument. EC type approval certificate acc. to CENELEC

Ex II (1) G [EEx ia] IIC

### WHG approval

Signal conditioning instrument as part of an overfill protection system acc. to WHG applied for.

## 1.3 Features

- microcomputer-controlled signal conditioning instrument for continuous measurement
- adjustment module with LC display and 6 keys
- adjustable integration time
- two fixed and three user-programmable linearisation curves
- fault monitoring
- fault signal and failure diagnosis via display

Input:

- 1 sensor input (capacitive electrode, pressure transmitter or other 4 ... 20 mA sensor)
- 1 correction input (for key, switch or level switch)

Outputs:

- 1 current output 0/4 ... 20 mA
- 1 voltage output 0/2 ... 10 V
- 2 relay outputs (spdt)
- 1 DISBUS output for digital wiring and for connection of VEGADIS 174
- 1 fail safe relay
- adjustment also via PC with adjustment software VVO; connection via the interface adapter of the VEGACONNECT series

## 1.4 Technical data

### Power supply

| | |
|---|---|
| Operating voltage | $U_{nom}$ = 20 … 250 V AC, 50/60 Hz<br>= 20 … 72 V DC |
| Power consumption | approx. 10 VA or approx. 4 W |

### Meas. data input

| | |
|---|---|
| Number | 1 input |
| Input type | active two-wire input, analogue (sensor is powered by VEGAMET) |
| Range | 4 … 20 mA |
| Applicable sensors (loop powered) | capacitive electrodes, pressure transmitters, process pressure transmitters, differential pressure transmitters,<br>ultrasonic sensor (4 … 20 mA sensor),<br>radar sensor (4 … 20 mA sensor) |
| Voltage | |
| - at 4 mA | approx. 19.5 V DC |
| - at 20 mA | approx. 16 V DC |
| Current limitation | at approx. 26 mA, short-circuit-proof |
| Detection line break | < 3.6 mA |
| Detection short-circuit | > 21 mA |
| Min. adjustment delta | 2 % of the entered sensor values |
| Connection cable | 2-wire standard cable (screening recommended) |
| max. resistance per wire | 35 Ω |
| Resolution | 1 µA |
| Linearity error | 0.025 % at 4 … 20 mA |
| Temperature error | 0.04 %/10 K at 4 … 20 mA |

### Current output

| | |
|---|---|
| Number | 1 output |
| Function | analogue output of the processing results |
| Range | adjustable between 0 … 20 mA |
| Load | max. 500 Ω |
| Resolution | 1 µA |
| Linearity error | 0.05 % (relating to 20 mA) |
| Temperature error | 0.05 %/10 K (relating to 20 mA) |

### Voltage output

| | |
|---|---|
| Number | 1 output |
| Function | analogue output of the processing results |
| Range | adjustable between 0 … 10 V |
| Current | max. 1 mA |
| Resolution | 0.5 mV |
| Linearity error | 0.05 % (relating to 10 V) |
| Temperature error | 0.06 %/10 K (relating to 10 V) |

### Relay outputs

| | |
|---|---|
| Number | 2 switching relays<br>1 fail safe relay |
| Contact | floating spdt |
| Contact material | $AGSNO_2$, hard gold plated |
| Turn-on voltage | min. 10 mV DC<br>max. 250 V AC/DC |
| Switching current | min. 10 µA<br>max. 3 A AC, 1 A DC |
| Breaking capacitance | max. 750 VA,<br>18 W at U = 60 V DC; 40 W at U ≤ 40 V DC |
| Min. switching hysteresis (Low/High delta) | 0.5 % |

### DISBUS output

| | |
|---|---|
| Function | for linking the signal conditioning instruments and for connecting digital indicating instruments |
| Connection cable | 2-wire standard cable (screening is recommended) |
| max. cable length | 1000 m |

### Indicating elements

| | |
|---|---|
| Clear text indication | LC display<br>- 4-line, 6 digits each<br>- background lighting |
| Analogue indication | LED chain consisting of:<br>- 11 segments 0 % ... 100 %<br>- shows the actual value of the measurement loop |
| LEDs in front plate | green: operating voltage on<br>red: fault signal (LED lights with deenergised relay)<br>yellow: relay status (standard setting: LED lights with energised relay) |

### Adjustment elements

| | |
|---|---|
| Front plate | 6 keys for configuration and parameter adjustment |
| Upper housing side | rotary switch for adjustment of the instrument address on DISBUS (in mounted status, covered by plug-in socket) |

### Ambient conditions

| | |
|---|---|
| Permissible ambient temperature | -20°C ... +60°C |
| Storage and transport temperature | -40°C ... +80°C |

### Electrical connection

| | |
|---|---|
| Screw terminal | max. 1.5 $mm^2$ |

## Electrical protective measures

| | |
|---|---|
| Instrument | IP 30 |
| Plug-in socket | IP 20 |
| Protection class | II |
| Overvoltage category | II |

## Electrical separating measures

| | |
|---|---|
| Reliable separation acc. to VDE 0106, part 1 between | power supply, fail safe and level relay and measuring data inputs |
| - reference voltage | 250 V |
| - isolation resistance | 2.3 kV |
| Galvanic isolation | between relay outputs |
| - reference voltage | 250 V |
| - isolation resistance | 1.4 kV |
| Potential separation | between DISBUS and outputs |
| - reference voltage | 50 V |
| - isolation resistance | 0.5 kV |
| Common reference potential at | voltage and current output |

## Mechanical data

| | |
|---|---|
| Series | module unit with plug-in socket, including transparent cover, sensor terminal cover, coded pin, two jumpers |
| Mounting | carrier rail mounting acc. to DIN 46 277, Bl. 3 |
| Dimensions, unmounted | W = 72 mm, H = 118.5 mm, D = 134 mm |
| Weight | approx. 480 g |

## CE conformity CE

VEGAMET 614 and VEGAMET 614 Ex signal conditioning instruments meet the protective regulations of EMC (89/336/EWG) and NSR (73/23/EWG). The instruments must only be used in industrial areas. Conformity has been judged acc. to the following standards:

| | | |
|---|---|---|
| EMC | Emission | EN 50 081 - 2: 1993 |
| | Susceptibility | EN 50 082 - 2: 1995 |
| NSR | | EN 61 010 - 1: 1993 |

## Ex technical data

### Power supply

| | |
|---|---|
| Operating voltage | $U_{nom}$ corresponds to non-Ex version |
| Reference voltage | $U_m$ = 250 V AC or 125 V DC |

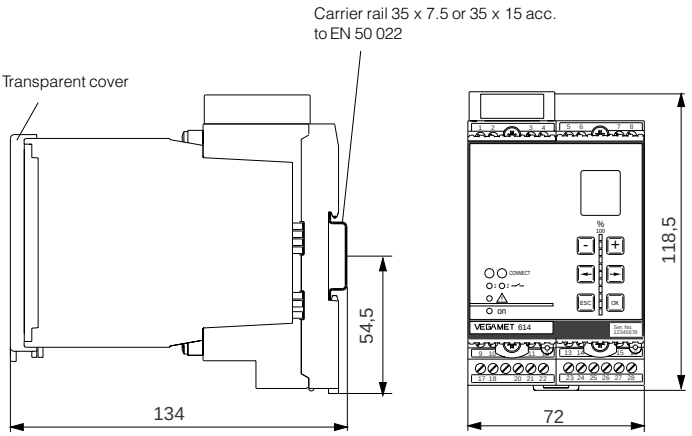
### Meas. data input (intrinsically safe circuit)

| | |
|---|---|
| Flame proofing | II(1) G [EEx ia] IIC, [EEx ia] IIB |
| Max. values | |
| - voltage | $U_O$ = 22.2 V |
| - current | $I_O$ = 112 mA |
| - power | $P_O$ = 620 mW |
| Characteristics | linear |
| Effective inner inductance $L_I$ | negligible |
| Effective inner capacitance $C_I$ | negligible |

| | EEx ia IIC | EEx ia IIB |
|---|---|---|
| Max. permissible outer inductance $L_O$ | 2 mH | 10 mH |
| Max. permissible outer capacitance $C_O$ | 160 nF | 1100 nF |

The intrinsically safe circuits are reliably separated from the non-intrinsically safe circuits up to a peak value of the nominal voltage of 375 V. The max. voltage on the non-intrinsically safe circuits should not exceed 253 $V_{eff}$ in case of failure.

## 1.5 Dimensions



# 2 Mounting and installation instructions

## Mounting

Each series 600 signal conditioning instrument consists of a plug-in socket for carrier rail mounting DIN 46 277 and a module unit.

The supply voltage can be connected to terminals 17 and 18.

For neighbouring series 600 signal conditioning instruments, it is possible to continue the connection L1 and N directly via the supplied jumpers. The same is valid for the connection of VEGAMET voltage output 0 … 10 V (terminals 15 and 16) and for DISBUS output (terminals 9 and 10).

**Note!**
The jumpers must never be used with single instruments or at the terminating end of an instrument row. If this is not observed, there is danger of coming in touch with the operating voltage or causing a short-circuit.

VEGAMET 614 Ex signal conditioning instrument is intrinsically safe and must not be installed in hazardous areas.

Before setup, the Ex separating chamber must be plugged into VEGAMET 614 Ex as shown in the illustration.

Safe operation is ensured only if the operating instructions manual and the EC type approval certificate are observed. VEGAMET 614 Ex must not be opened.

## Coding

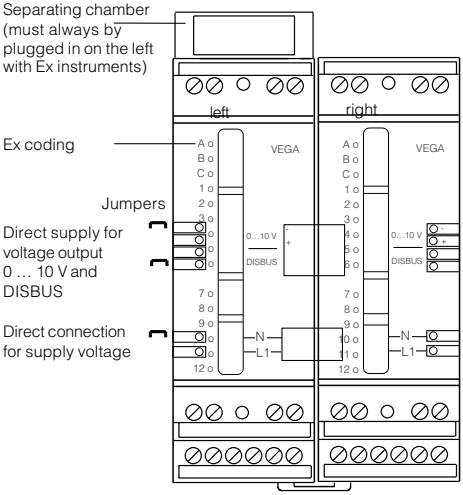
To avoid interchanging the various signal conditioning instruments, the plug-in socket is provided with pins and the signal conditioning instruments with corresponding gaps (mechanical coding).

Instrument coding ensures through differently positioned coding pins that the various series 600 signal conditioning instruments are not interchanged.

An Ex coding with inserted coding pins ensures that the non-Ex and Ex instruments are not interchanged.

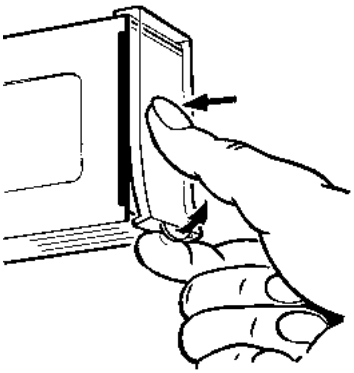
On VEGAMET 614 Ex, the supplied coding pins (instrument coding pin and Ex coding pin) must be inserted by the user according to the below table.

| | Instrument coding | Ex coding |
|---|---|---|
| VEGAMET 614 | right 1<br>left B<br>right B | — |
| VEGAMET 614 Ex | right 1<br>left B<br>right B | left A |



## Transparent cover

To protect the instrument against unauthorized adjustment, the front plate of VEGAMET can be equipped with two lockable transparent covers after setup. To remove the transparent cover, see illustration.



# 3 Electrical connection

## 3.1 Connection instructions

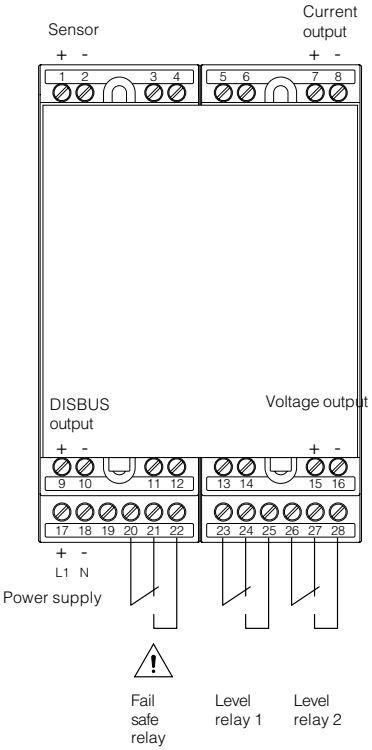
Note the following instructions for electrical connection:

- The connection must be made acc. to the local installation standards (e.g. in Germany acc. to the VDE-regulations).
- The wiring between VEGAMET 614 and sensor can be made with standard two-wire cable.
- If strong electromagnetic interferences are expected, we recommend the use of screened cable. The screening must be earthed on both ends.
- The line resistances stated in the technical data must not be exceeded.
- If overvoltages are expected, we recommend a sensor electronics with integrated overvoltage protection or the installation of VEGA overvoltage arresters.

## 3.2 Connection instructions for Ex approved applications

When wiring between VEGAMET 614 Ex and an explosion protected sensor, the installation rules, in Germany acc. to VDE 165 and the EC type approval certificate, must be observed. The official documents are supplied with the respective instrument.

## 3.3 Wiring plan




The connections "9, 10, 15, 16, 17 and 18" can be connected with the supplied jumpers to neighbouring series 600 signal conditioning instruments.

**Ex version**

Before connecting Ex certified instruments, please note the instructions in the attached official documents as well as the valid installation regulations. Make sure that the Ex separating chamber is plugged in on the left instrument side before setup (see illustration Coding).

# 4 Adjustment

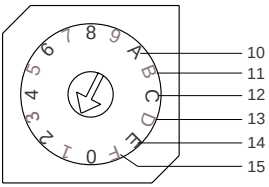
## 4.1 Indicating and adjustment elements

A rotary switch is located on the upper side of the housing. It is used to set the instrument address on DISBUS. This setting is necessary if several VEGAMET signal conditioning instruments are linked via the DISBUS or if you control a VEGADIS 174 indicating instrument via the DISBUS.

The adjustment range 1 … F corresponds to the DISBUS addresses 1 … 15.
Factory setting: 1

**Note:**
If address 0 is set, the VEGAMET does not participate in the DISBUS communication.

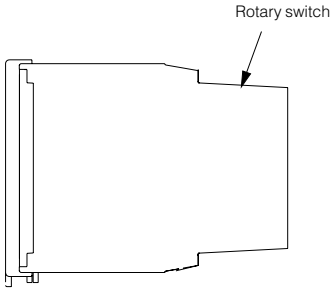
**Rotary switch**



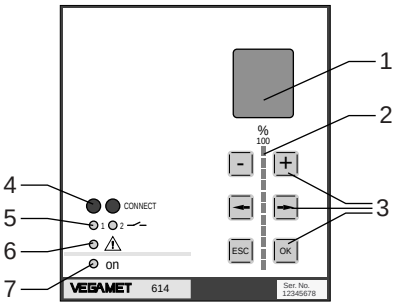

The set instrument address on the DISBUS can be indicated via the LC display.

**Note**
If several VEGAMET are linked via the DISBUS, each address must be assigned only once!

**Position of the rotary switch**



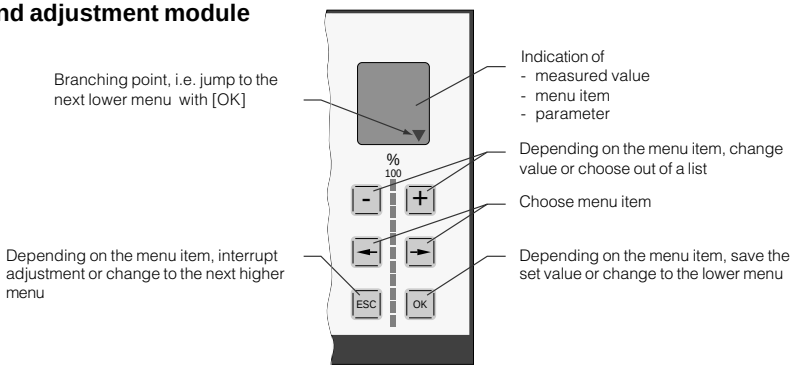

**Front plate**




1 LCD (4 lines with 6 figures each, illuminated) for clear text indication
2 LED chain (yellow) for quasianalogue indication of the measured value
3 Keys for menu adjustment
4 Connection socket for VEGACONNECT
5 LED (yellow) lights if the relay is energised (standard setting)
6 LED (red), lights if fail safe relay is deenergised
7 LED (green), lights if operating voltage is on

## 4.2 Adjustment system

### Indicating and adjustment module




### Reduced menu - extended menu

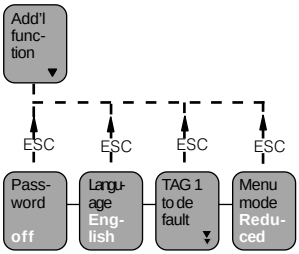
Two menu systems are available: the "reduced menu" and the "extended menu".

**Note:**
VEGAMET 614 is preset to "reduced menu" mode!

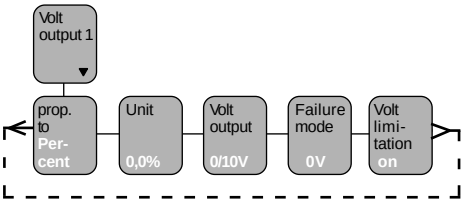
In the majority of applications, you can carry out the necessary settings in this menu mode (see also chapter 4.5 Comparison of the menu modes).

### Adjustment structure

The adjustment is made via 6 keys in conjunction with the text display. The jump from the measured value display to the next lower menu item is made with [OK]. Use [–>] or [<–] to change within this menu level from one menu item to the other. A branching point is indicated by the symbol ▼ and enables with [OK] a jump to the next lower menu item. Parameters are indicated by the missing symbol ▼. The value of the parameters can be modified with [+] or [–] or chosen out of a list. The modified value can be saved with [OK]. To interrupt a setting (without saving the modification), you have to push [ESC]. A jump up to the next higher menu item is made with [ESC]. 15 minutes after pushing a key for the last time, an automatic reset to the measured value display is triggered. A jump up to the next higher menu level with [ESC] is possible from each menu item, even if no connection is shown in the menu schematics.




If you are in the utmost right menu item of a menu row and push the [->] key, you will immediately reach the utmost left menu item of this row. You also reach immediately the right menu item from the left one, if you push the [<-] key.
The connections (shown with a broken line) are not shown in the menu schematics in order to provide a clearer overview.



### Formatting examples the menu schematic

Langu-
age
**Eng-
lish**

White letters indicate parameters which can be modified with the [+] or [–] key and saved with the [OK] key. Examples:

- In the menu item "Language" you can change from German to English.

Param.
***TAG-
No. 1***
▼

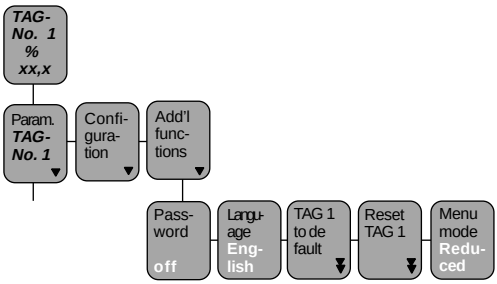
Bolt print/italic inputs, e.g. the measurement loop name "TAG-No. 1" can show a different text if you have carried out a parameter adjustment or configuration of the measurement loop. In the menu schematics, you will see the factory setting.

Volt
at
0%
0,000

Light grey menu items are only displayed if necessary (depending on the adjustments in the other menu items).

### Changing the menu mode:

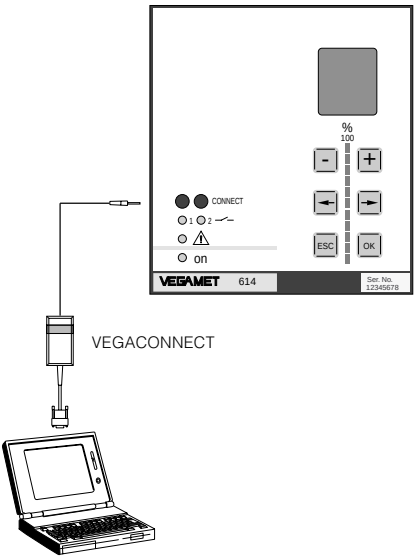
Move from the display of measured value (TAG-No.1) to the menu item "Menu mode reduced". Now push [+] twice until "Menu mode Extended" appears, then push [OK]. You can now return to the measured value indication by pushing [ESC] twice.




## 4.3 Adjustment via PC

Setup

- directly via the keys of the adjustment module
- or with a PC, equipped with VVO software (VEGA Visual Operating) and an interface adapter VEGACONNECT.



## 4.4 Configuration and parameter adjustment

No matter whether you set up your VEGAMET via the keys of the adjustment module or via a PC with the software VVO, the procedure is always the same.

Proceed in the following sequence:
- configuration (if not already configured with a factory setting)
- parameter adjustment.

In this operating instructions manual, the adjustment steps are described which are directly carried out on the keys of VEGAMET. The adjustment via the software VVO is described in a separate manual.

**Configuration**
Configuration means initial assigning or setting functions. VEGAMET requires a (mostly once) basic co-ordination that determines the applications and the assignments of the inputs and outputs. Choices can be made from existing functions and options. This procedure is called configuration. The signal conditioning instruments are delivered with a configuration which only needs to be changed in special cases.

The basic configuration includes the following steps:

**1 Configuration measurement loop**
- Choose the kind of application (level, gauge…)
- Choose sensor type (capacitive, hydrostatic…)
- Determine application (standard, level difference…)
- Determine options (no option, corrections…)

**Note:**
The measurement loop configuration can only be modified, if a "Reset to single measurement“ has been carried out previously (under "Additional functions“ in the extended menu). If you only want to modify the sensor type, you first have to carry out "Reset TAG 1“ (under "Additional functions“ in the reduced menu).

**2 Configuration of inputs**
- Determine from where your VEGAMET receives the input data (sensor, other VEGAMET)
- Enter sensor characteristics values (meas. range, current range)

**3 Configuration of outputs**
- All outputs (except fail safe relay) can been assigned to one sensor or can be switched off.

After basic configuration, VEGAMET goes into operating mode and indicates the actual measured value. The other configurations should be carried out after the parameter adjustment.

**Parameter adjustment**
Parameter adjustment means changing the values. Signal conditioning instruments have many parameters, the values of which can be modified, such as for example, the integration time of 0 … 600 s. The modification of these values is called parameter adjustment. The parameter adjustment does not influence the configuration. Take note that parameter adjustment is only possible after a configuration has been carried out (e.g. set values of the current input after the current output has been assigned).

## 4.5 Comparison: reduced menu – extended menu

In the table the most important functions of VEGAMET 614 are listed – each with a mark indicating in which menu mode the functions are available.

| Function | Reduc. menu | Ext. menu |
|---|---|---|
| Adjustment with medium | x | x |
| Adjustment without medium | x | x |
| Set integration time | x | x |
| Simulation | x | x |
| Switch over current output (4/20 mA, 0/20 mA, 20/4 mA, 20/0 mA) | x | x |
| Switch over voltage output (2/10 V, 0/10 V, 10/2 V, 10/0 V) | x | x |
| Switch over relay mode (overfill protection – dry run protection) | x | x |
| Scaling (display) | x | x |
| Change menu mode (reduced – extended) | x | x |
| Change menu language | x | x |
| Activate/deactivate password | x | x |
| Change sensor type | x | x |
| Change measurement loop name | x | x |
| Reset measurement loop (Reset TAG) | x | x |
| Reset measurement loop to default (TAG to default) | x | x |
| Edit linearisation curves | – | x |
| Change mode (e.g. level – gauge) | – | x |
| Select different reference values for outputs | – | x |
| Define output behaviour (current/voltage output) in case of failure | – | x |
| Adapt VEGAMET to sensor characteristics values | – | x |
| Offset correction during adjustment | – | x |
| Adjust relay switching delay | – | x |
| Reset level | – | x |
| Assign inputs (from another VEGAMET) | – | x |
| Switch on/off current/Volt limitation | – | x |
| Individual setting of current/voltage output values betw. 0 … 20 mA/0 … 10 V | – | x |
| Manual offset correction | – | x |
| Manual real value correction | – | x |
| Info indication | – | x |

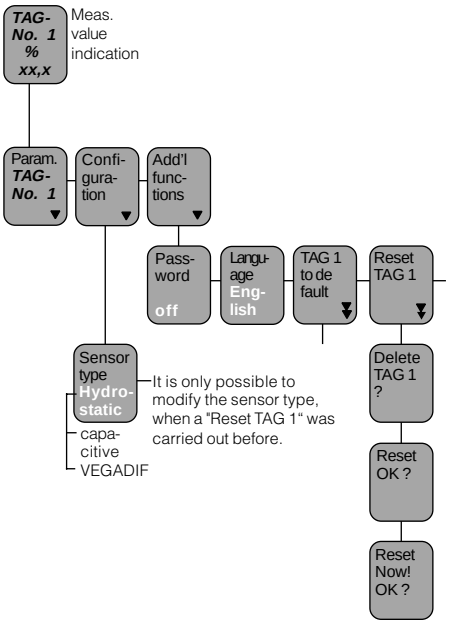
# 5 Setup

- Set the VEGAMET instrument address on the circuit board by means of the rotary switch (only necessary, if several VEGAMET are connected on the DISBUS).
- Install VEGAMET.
- Connect sensor and power supply.
- After switching on, the display indicates for approx. 10 secs the instrument type and the software version, e.g. "MET 614 V1.12".
- If a measurement loop has not yet been configured, the display shows "Configuration", the red failure LED also lights. In this case, proceed as described under "6.1 Configuration of measurement loop".
- If a measurement loop has been configured, the display shows a value, e.g. "TAG-No. 1 21.8 %".You can now carry out the settings as described in the chapter "6 Settings in the reduced menu".

# 6 Settings in the "Reduced menu“

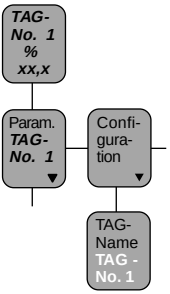
## 6.1 Configuration of measurement loop

### Choose sensor type




By default, VEGAMET 614 is configured for connection to a hydrostatic pressure transmitter. If, for example, you use a capacitive electrode, you have to proceed as follows:
Move to the menu item "Sensor type Hydrostatic“.
Push [+] or [–] once. The word "Hydrostatic“ flashes. You are now in the editing mode.
Continue pushing [+] or [–] until the display shows "Sensor type capacitive“. You are still in the editing mode.
Now push the [OK] key. By doing this, you save the settings and quit the editing mode.

### Name measurement loop




You can modify the measurement loop name "TAG-No. 1“, if you want a more useful designation.
Two lines with six figures each are available. To do this, move to the menu item "TAG name …“.

Push [+] or [–] once. The first character of the measurement loop name, in this example the letter T, flashes (editing mode). Continue pushing the [+] or [–] key, by doing this you scroll through the alphabet, through the row of numbers and through a list of characters.

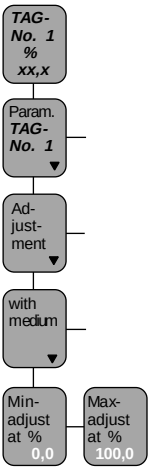
When you have reached the requested character, push [–>]. The next character is activated and begins flashing. Scroll again with [+] and [–] to the requested character. With [–>] you can move to the next character.

If you have finished the last position of the name and you have "written" the name of the measurement loop in this way, you have to push [OK] to save the setting. If you quit the menu item without saving, the name of the measurement loop is again "TAG-No. 1“.

In the display of measured value and in all other menu items in which the measurement loop name is shown, you will now find the new designation.

## 6.2 Adjustment with medium

You can either carry out the adjustment **with** medium or **without** medium. Adjustment with medium means that you carry out the adjustment taking the actual level into account. To carry out an adjustment with medium, it is necessary to know the percentage value of the actual vessel filling.




In this procedure, the percentage values which correspond to the actual min. and max. fillings are entered. It doesn't matter if you enter first the min. value or the max. value. If you know, for example, that your filling is actually 80 %, you can enter in the menu "max. adjustment" the value "80“. Later, when your filling is, for example, 10 %, you enter in the menu "min. adjustment" the value "10“.

The bigger the difference between the two adjustment points, the more precise the measurement over the whole measuring curve. An adjustment at 0 % and 100 % would be ideal. For practical reasons, it is not always possible to completely empty or fill a vessel. The distance between the two adjustment points, however, should be at least 10 % of the sensor range.

**Adjustment example**

You know that your vessel is actually filled up to 80%. Move to the menu item "Max. adjust at % 100.0“. Push the [–] key briefly, so that the figure 100.0 flashes (editing mode).

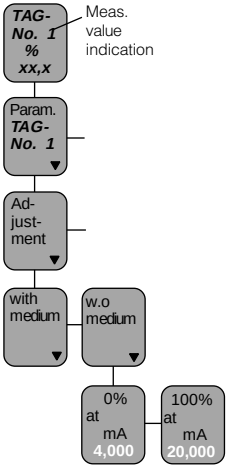
Continue pushing [–] until the figure 80.0 appears on the display. Now push [OK] to save the adjustment.

Later, when your filling is, for example, 10 %, go to the menu item "Min. adjust at % 0.0“. Briefly push [+], until the figure 0.0 flashes (editing mode).

Continue pushing [+] until "10“ appears on the display. Now push [OK] to save the adjustment.

You can, of course, carry out the adjustment with medium at 0 % and 100 % filling. Note: The figures 0 % and 100 % must flash (editing mode), before they can be saved with the [OK] key.

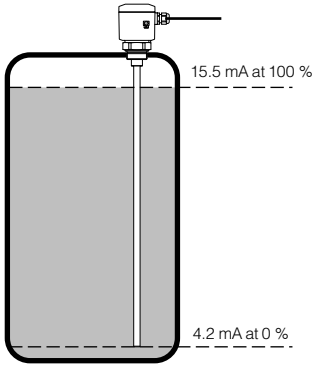
## 6.3 Adjustment without medium

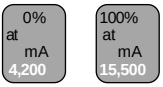



For this adjustment procedure, you have to enter two sensor current values (4 … 20 mA) corresponding to the levels 0 % and 100 %.

**Adjustment example**

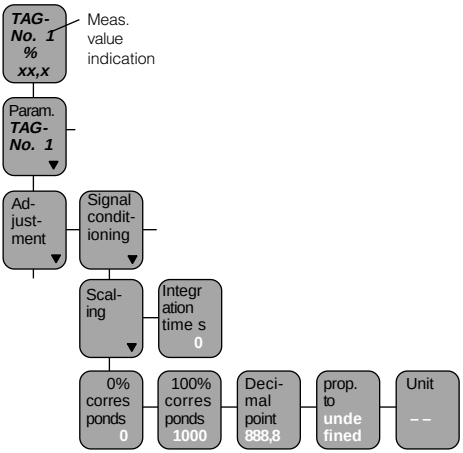
You know the data of the sensor, i.e. you know that at 0 % filling, the sensor delivers a current of 4.2 mA and at 100 % filling a current of 15.5 mA. Enter these values in the menu items.




Enter in these two menu items the values of the senor. Use the [+] and [–] keys to set the values and [OK] to save the values.

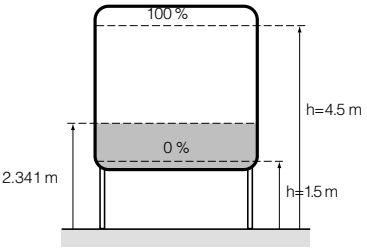
## 6.4 Scaling




The adjustments under scaling determine which number values and which unit will be actually displayed on the measured value indication (upper menu item). In the menu items "0 % corresponds…“ and "100 % corresponds…“ you can enter with [+] or [–] and [OK] values which should be displayed at 0 % and at 100 % filling. In the menu item "Decimal point…“ you determine the position of the decimal point. In the next menu item "prop. to…“ you can select from a list of parameters: percent, mass, volume, pressure etc. After pushing [+] or [–] save with [OK]. According to this adjustment, the menu item "Unit…“ provides a new choice, e.g. m, dm, cm, mm, ft, yd and in, if you have selected the parameter "Height“ (compare chapter "8 Measured quantity and units“).

**Scaling example**

You have a raised tank and you want the level to be indicated in meters with three digits after the decimal point.




0% corres ponds 1500

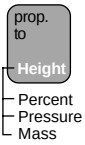
Enter the number 1500 (with keys [+], [–] and [OK]) in this menu item. This corresponds to the level at 0 % (if you want to have a lower resolution of the meas. value indication, you can also enter 150 or 15).

100% corres ponds 4500

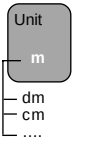
Enter the number 4500 (with keys [+], [–] and [OK]) in this menu item. This corresponds to the level at 100 %.

Deci-mal point 8,888

Adjust the decimal point as shown (with keys [+], [–] and [OK]).



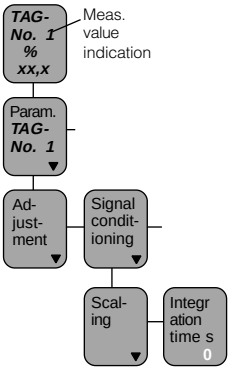

Choose the term "Height“ in this menu item (with keys [+], [–] and [OK]).




If you have chosen "Height“ in the previous menu item, you get a choice of several units (mm, dm, cm, m, yard…). Choose m (with the keys [+], [–] and [OK]).

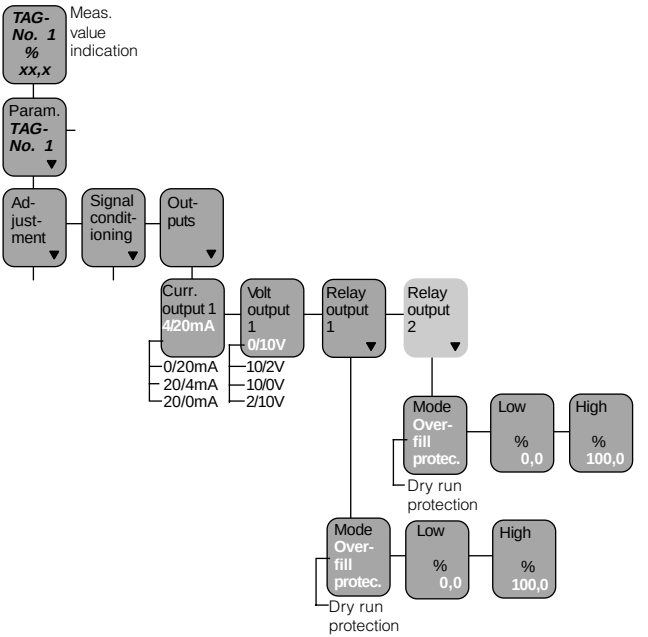
You can now see the scaled value in the measured value display

## 6.5 Integration time




If the integration time is set to 0 s (factory setting), each quick change of the product surface (e.g. waves) will be immediately detected and interpreted as level change. All output values of VEGAMET will follow the wave movements. To avoid this, the integration time can be increased (max. 600 s are possible with VEGAMET). The higher the time adjustment, the slower the measurement reacts.

## 6.6 Outputs



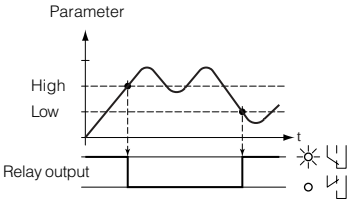

The current output of VEGAMET is set to 4 … 20 mA. By pushing [+] or [–] and [OK] you can set the output to the following values: 0/20 mA, 20/4 mA and 20/0 mA.

Beside the preadjustment (0/10 V), the following options are available for the voltage output: 10/2 V, 10/0 V and 2/10 V.

As a factory setting, the relay outputs are set to mode "Overfill protection“ (mode A). By pushing [+] or [–] and [OK] you can assign the mode "Dry run protection“ (mode B) separately for each relay output. In the next menu items, you can determine the upper and lower switching points for the set mode.

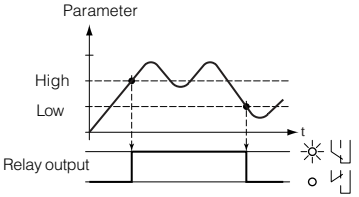
The graphics on the right show the behaviour of the relay outputs and LEDs depending on the level.

**Overfill protection**



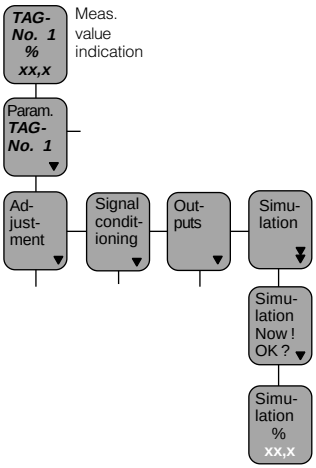

The relay of relay output 1 deenergises at the switching point "High“ (safe switching condition).

**Dry run protection**



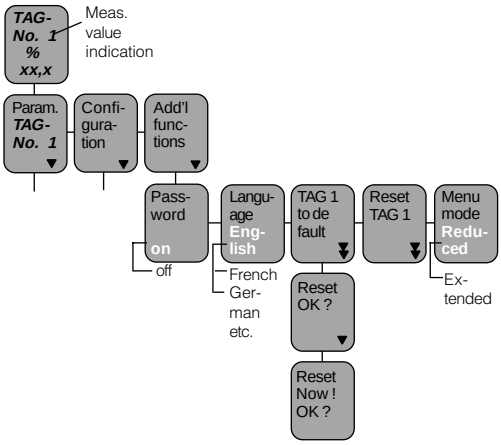

The relay of relay output 1 deenergises at the switching point "Low“ (safe switching condition).

## 6.7 Simulation




To check outputs and connected instruments, you can adjust any individual percentage value with the keys [+] and [–] in this menu item. Initial point is always the actual measured value. The indicated value flashes when simulation is activated. 15 minutes after setting the simulated value, the simulation automatically terminates and resets to meas. value indication.

## 6.8 Password, language, default, reset, menu mode




### Password

You can also protect VEGAMET 614 against unauthorised or incorrect adjustment. Activate in the menu "Password" the option "on" (with keys [+], [–] and [OK]). Now, you can only check the meas. value on the display. You can still reach any menu item with the arrow and OK keys, but as soon as you try to modify an adjustment, you are asked for the password. Enter the number "614" (with the keys [+], [–] and [OK]), to carry out the adjustment. Entering the password once is sufficient to open all protected menu items.

### Language

In the menu item "Language", you can choose a language other than German such as English, French etc. as menu language (with keys [+], [–] and [OK]).

### Reset

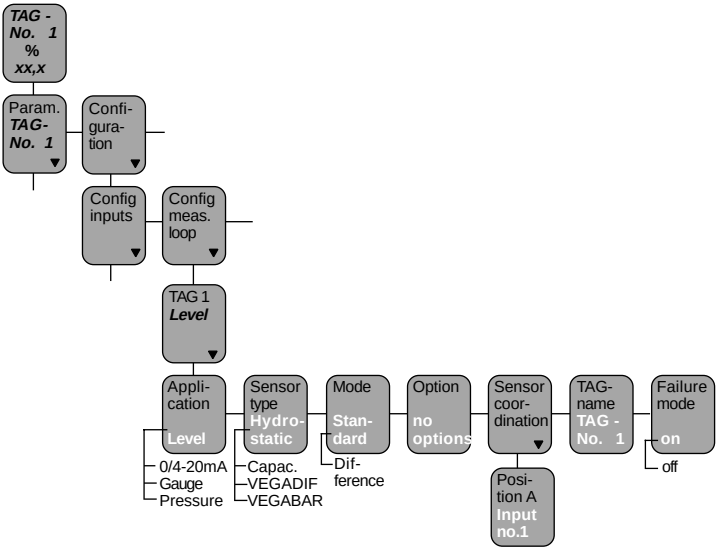
In the menu item "TAG 1 to default" you reset all settings relating to measurement loop 1 to default. If, for example, you have changed the name of the measurement loop to "Silo 5", after the reset, the name is again "TAG-No. 1". Also, all adjustment values that you have entered for measurement loop 1 are now reset to default.

### Menu mode

The menu modes "Reduced" and "Extended" are available. With the keys [+], [–] and [OK] you choose the required menu mode. The menu schematics of the reduced menu and the extended menu are shown later in this operating instructions manual. The factory setting is "Reduced menu".

# 7 Settings in the "Extended menu“

## 7.1 Configuration of measurement loop




The measurement loop configuration is usually provided as factory setting. Should a fundamental modification of the measurement loop configuration be necessary, a "Reset to single measurement“ must be carried out first (in the menu "Additional functions“, "Reset VEGAMET“). Only then can you modify the adjustments in the menu items Application, Sensor type, Mode and Option. You should, therefore, work through the individual menu items in the given sequence. The selection or adjustment options always depend on the adjustment in the previous menu item. If, for example, in the menu item Application "Level" has been set, only a sensor type that is suitable for level detection can be selected in the menu item "Sensor type".
As soon as you have carried out and confirmed an adjustment in the menu item "Option“, the following message appears on the display: "TAG being created!“.

You choose the application 4/20 mA if you want to connect an analogue ultrasonic sensor, an analogue radar sensor or a sensor of another manufacturer to the VEGAMET.

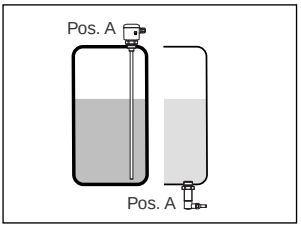
In the following illustrations, further application modes are shown. In addition, you will see there which adjustments you have to carry out in the menu items "Sensor type“ and "Mode“.

In the menu item "TAG-Name“ you can assign any name to the measurement loop (see chapter "5.2 Standard menu“).

If you chose "Failure mode off“, the fail safe relay and the failure indication on the front plate become nonoperatable.

### Level measurement

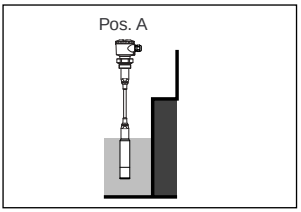
Application: Level
Sensor: Capacitive electrodes
Hydrostatic pressure transmitters
Differential pressure transmitters
Mode: Standard
Option: none
Parameter: TAG1 level




*Level measurement*

### Gauge measurement

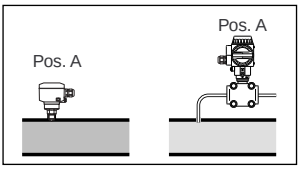
Application: Gauge
Sensor: Hydrostatic pressure transmitters
Mode: Standard
Option: none
Parameter: TAG1 gauge




*Gauge measurement*

### Process pressure measurement

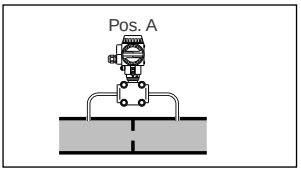
Application: Pressure
Sensor: Process pressure transmitters (VEGABAR)
Differential pressure transmitters (VEGADIF)
Mode: Standard
Option: none
Parameter: TAG1 process pressure




*Process pressure measurement as standard pressure measurement*

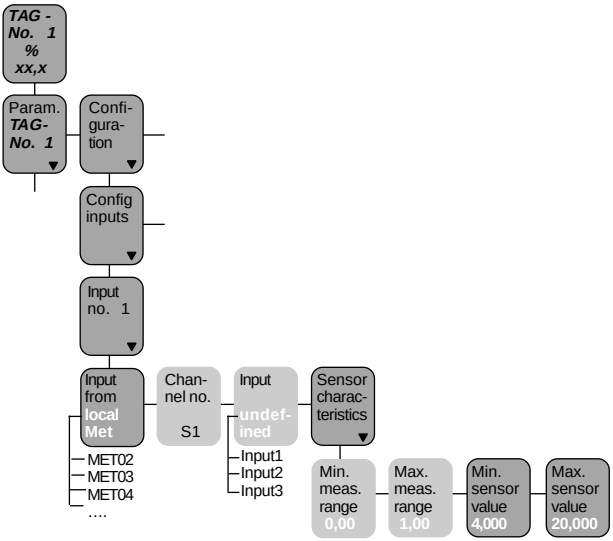
### Differential pressure measurement

Application: Pressure
Sensor: Differential pressure transmitter (VEGADIF)
Mode: Difference
Option: none
Parameter: TAG1 pressure difference




*Process pressure measurement as differential pressure measurement*

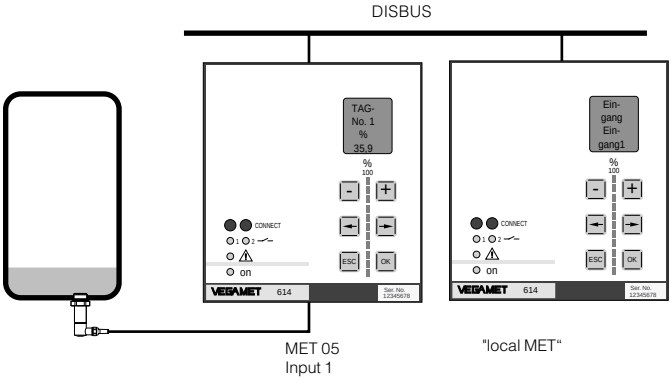
## 7.2 Configuration of inputs



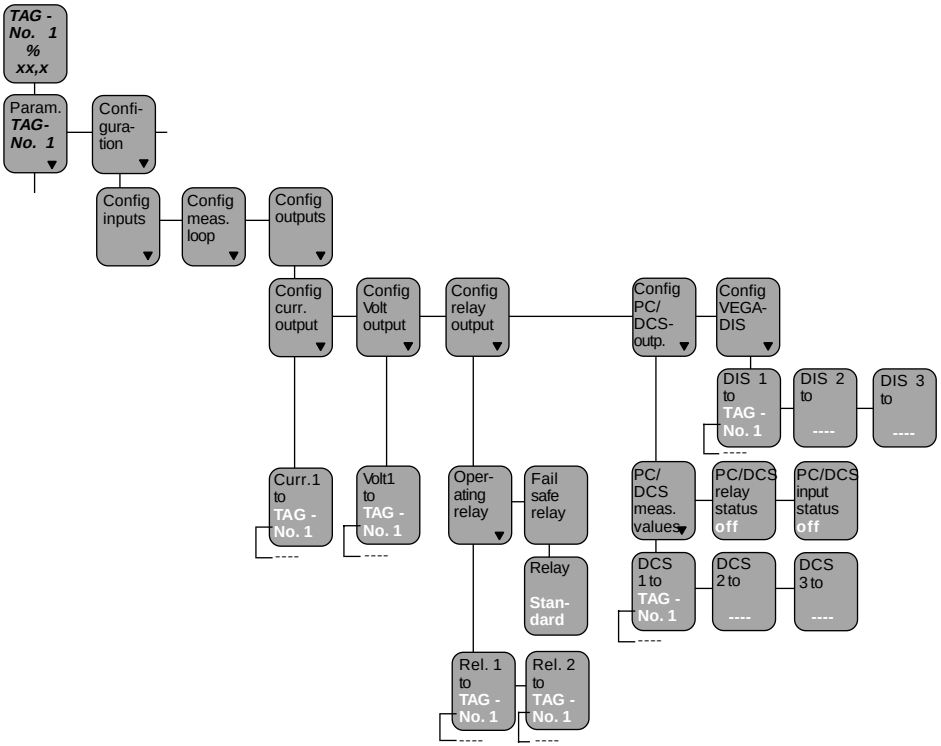

**Input local MET:**
Here you can call another VEGAMET (e.g. Met 05) and thereby specify that the input signal is not taken directly from a connected sensor, but from a VEGAMET connected via DISBUS (e.g. VEGAMET 614). The called VEGAMET number corresponds to the DISBUS address of the instrument (see chapter 4.1).

If another VEGAMET has been selected, the menu item "Input undefined" appears in which you can set the input number of the other VEGAMET (see illustration).

The menu items "Min. meas. range“ and "Max. meas. range“ are only visible with hydrostatic pressure transmitters. You can obtain the relevant sensor data from the test certificate of the hydrostatic pressure transmitter.



## 7.3 Configuration of outputs



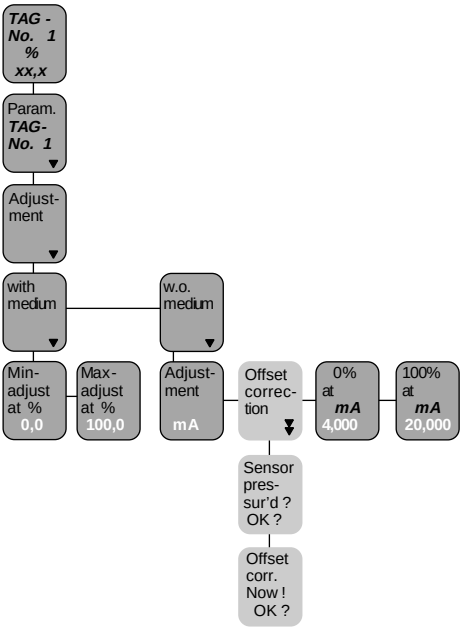

**PC/DCS output and DIS output:**
The PC/DCS signal as well as the DIS signal are transmitted via the DISBUS. The PC/DCS output delivers output signals from VEGAMET to the interface converter VEGACOM 557. This interface converter transfers the signals of VEGAMET via different standard protocols to connected systems (DCS/DCS). In the menu items "DCS 1 to“ up to "DCS 3 to…“ the measurement loop can be assigned or switched off.

In the menu items "PC/DCS relay status“ and "PC/DCS input status“, it can be specified that the relay mode and input status will also be transmitted via the DISBUS.

Up to three external indicating instruments (VEGADIS 174) can be connected to DISBUS. In the menu items "DIS 1 to…“ up to "DIS 3 to–“ the measurement loop can be assigned or switched off.

In the factory setting, the current, volt and relay outputs are assigned to measurement loop "TAG-No. 1“. All outputs can be individually switched off (----), i.e. prevented from accessing a measurement loop.

## 7.4 Adjustment




The **adjustment with medium** corresponds to the procedure in the reduced menu (see appropriate chapter).

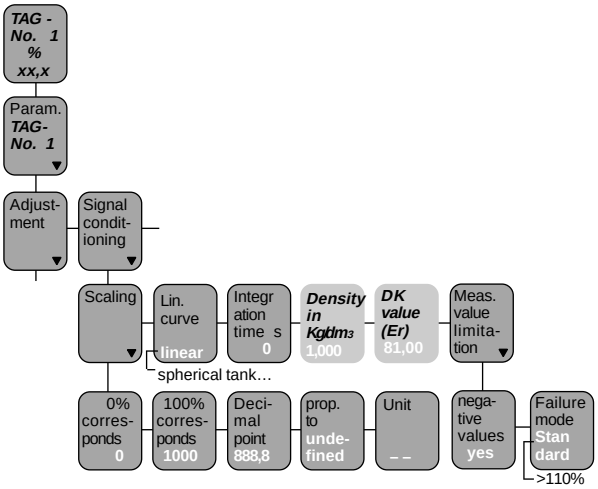
- if the medium is changed later on (medium with another density value or DK value) and no new adjustment can be made or
- if the MET indication and the DIS outputs relate to height in meters

note the following:
In applications with hydrostatic pressure transmitters, the adjusted density value (see menu "Parameter, Signal conditioning“) must correspond to the value of the medium. In applications with capacitive electrodes, the adjusted DK value must correspond to the value of the medium.

For the **adjustment without medium,** two anticipated values for level, gauge etc. must be adjusted corresponding to 0 % and 100 % must be entered.

The menu item "Offset correction“ is activated when hydrostatic pressure transmitters are connected. The offset correction should be carried out after installation of the sensor as the sensor values can differ slightly due to varying installation positions (vertical or horizontal installations). With the offset correction, the meas. data of the unpressurised sensor (vessel empty) are detected as correction values and taken into account in subsequent measurements.

## 7.5 Conditioning




The menu items "**Scaling**“ and "**Integration time**“ corresponds to the menu items in the "reduced menu“ (see appropriate chapter).

The menu items "**Density...**“ or "**DK value...**“ are displayed as options when under "Configuration measurement loop“ the appropriate sensor type has been selected. The density or DK value must, before adjustment with medium, be so adjusted that it corresponds to the value of the medium (water has a density of 1.0 kg/dm³ and a dielectric value of 81.00).

The following linearisation curves are available:
- linear (factory setting)
- horiz. cylindrical tank
- spherical tank
- Lin-curve 1
- Lin-curve 2
- Lin-curve 3
  Lin-curves 1 ... 3 can be edited by the user (see appropriate chapter).

After scaling or linearisation, the required output must be assigned to the scaled or linearised value (menu item "prop. to..." and "Unit...") in the menu range "Parameter adjustment of outputs".

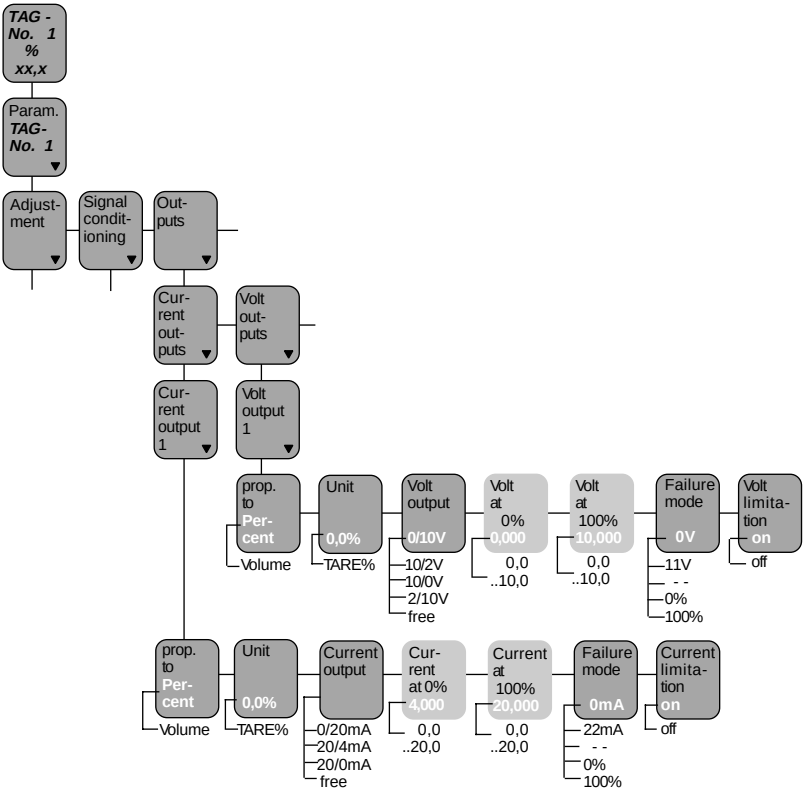
Under **Meas. value limitation,** you can exclude negative values.

**Failure mode Standard**
means that at a sensor current of 3.6 mA or 21 mA, the fail safe relay responds.

**Failure mode >110%**
generates a fault signal if a meas. value of more than 110 % or less than -10 % is reached.

## 7.6 Parameter adjustment of outputs

### Current outputs/Volt outputs




In the menu item "**prop. to**", you can choose between percent and volume. "Prop. to volume" is then useful when under "Signal conditioning - Linearisation curves", for example, a spherical tank or an individually defined linearisation curve is selected. The output current or the output voltage is then proportional to the volume of the tank contents.

**Unit:**

Selection list dependent on the choice in the previous menu item "prop. to" (see chapter "8 Measured quantity and units").

**Volt output/Current output:**

If "free" is chosen, the following (light grey) menu items appear:

- Volt at 0 %/100 %:
  Individual voltage values between 0 V and +10 V can be set.
- Current at 0 %/100 %:
  Individual current values between 0 mA and +20 mA can be set.

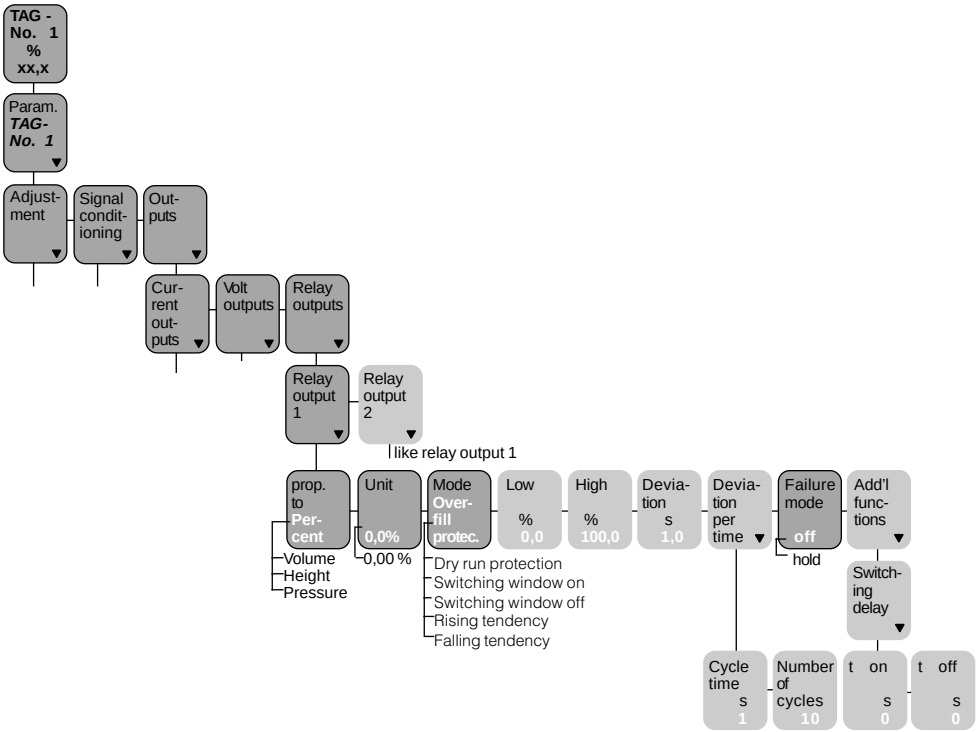
**Failure mode:**

The height of the output current/output voltage in case of failure is determined. If "--" is chosen, the actual value is maintained.

**Volt limitation/Current limitation on:**

Voltage/current remain within the values which are given in the menu item "Voltage output/current output".

## Relay outputs




In the menu item "**prop. to**“, you choose a parameter to which the relay reacts. You can choose between percent and volume ("prop. to volume“ is useful when under "Conditioning - Linearisation curves“, for example, a spherical tank or a user-programmable lin. curve is selected). In the next menu item, you can select the suitable **Unit**. In the menu item "**Mode**“, the mode of the relay can be selected. The individual relay modes are described on the following pages.

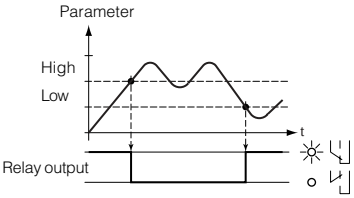
If mode "Rising tendency“ or "Falling tendency“ is selected, the menu items "Deviation“, "Dev. per time“, "Cycle time“ and "Number of cycles“ appear.

With all other modes, the menu items "Low“ and "High“ appear. There you can determine the switching points for the relay.
The menu item "**Failure mode**“ always appears. "Failure mode off“ causes the relay to deenergise when a failure (e.g. sensor shortcircuit) occurs. "Failure mode hold“ causes the actual relay status to be maintained when a failure occurs.

Under "Add'l functions“ you can adjust a switch on delay (t on) and a switch off delay (t off) of the relay of max. 600 s (with the relay modes "Rising tendency“ or "Falling tendency“ no switching delay can be set).

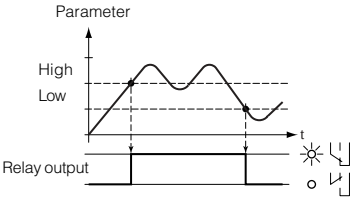
**Relay mode: overfill protection**

The relay deenergises at switching point "High“ (safe condition).



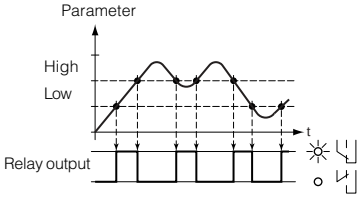

**Relay mode: dry run protection**

The relay deenergises at switching point "Low“ (safe condition).



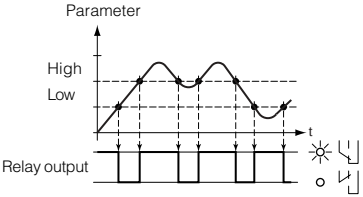

**Relay mode: switching window on**

The relay is energised within the switching window.




**Relay mode: switching window off**

The relay is deenergised within the switching window.

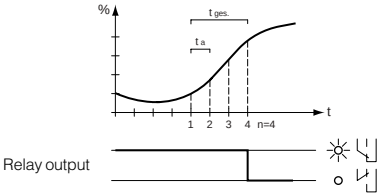


**Tendency determination**

The level change within the cycle time (ta) is determined and after completion of all cycles (n), an average value is generated out of the sum of the level changes. If this average value exceeds a previously defined % value, the tendency determination responds, i.e. an energised relay deenergises. If "Rising tendency“ or "Falling tendency“ are selected, the menu items "Deviation in %“ and "Deviation per time“ are activated.

–– Mode Rising tendency

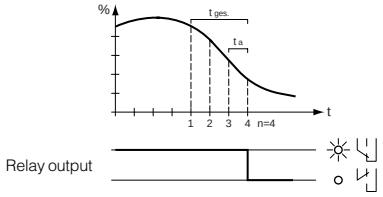
The relay deenergises when the rising average value of "t tot.“ exceeds the previously defined % value.




ta = cycle time
n = number of cycles

Falling tendency

same dependence, however with falling average value




ta = cycle time
n = number of cycles

–– Deviation in % 2

If the level change exceeds the % value set here, the tendency determination responds.
0 … 110 %
Example 2 % (change) per t tot.

–– Deviation per time

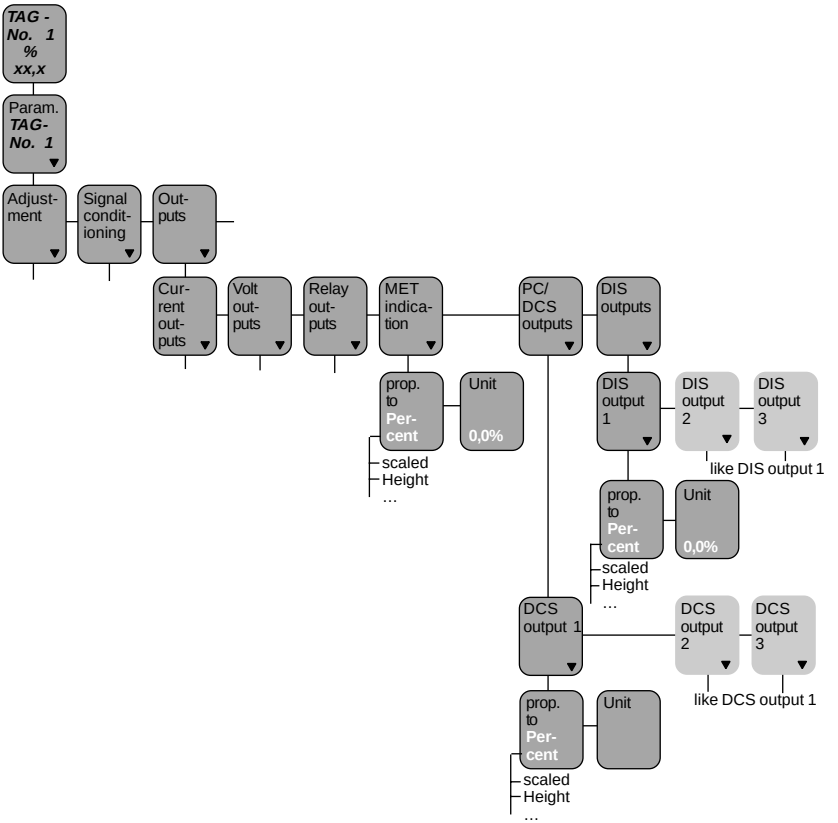
–– Cycle time in s 60

Adjustment range 0 … 999 s
Example 60 s correspond to 1 minute

–– Number of cycles 4

Adjustment range 0 … 99 cycles
Example: t tot = ta • n = 60 • 4 = 240 s = 4 min, i.e. after every 4 min., the average value of the deviation is generated and the result is compared with the given deviation in %, here in the example = 2 %

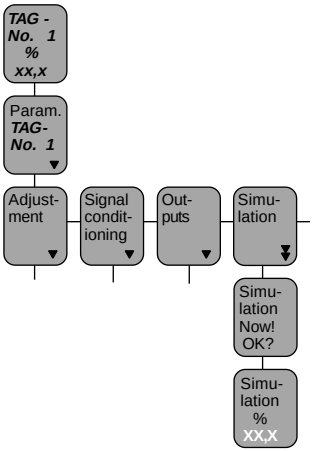
## MET indication/PC/DCS outputs/DIS outputs




**MET indication/Unit:**
In the menu item "prop. to“, you choose the parameter to which the VEGAMET display reacts (if you have carried out a scaling under the menu item "Signal conditioning“, "prop. to scaled“ will have been automatically set, i.e. the display will indicate the scaled value). "Prop. to volume“ is then useful if you have selected, for example, a spherical tank or a user-programmable lin. curve under "Signal conditioning - Linearisation curves“. The indicated value of the VEGAMET display then reacts proportionally to the volume of the tank contents.

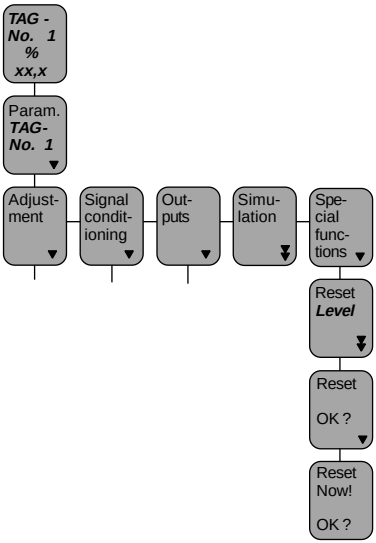
**PC/DCS outputs and DIS outputs:**
Are adjusted according to the same procedure as the MET indication.

## 7.7 Simulation




To check the outputs and connected instruments, you can adjust in this menu item any individual percentage value with the keys [+] and [–]. The starting point is always the actual measured value. The indicated value flashes when the simulation is activated. 15 minutes after setting the simulated value, the simulation is automatically terminated and the display reset to measured value indication.

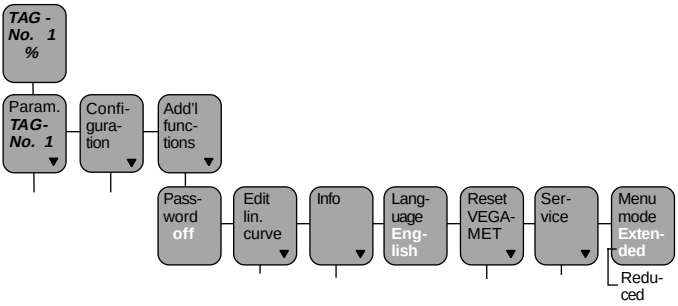
## 7.8 Special function: Reset



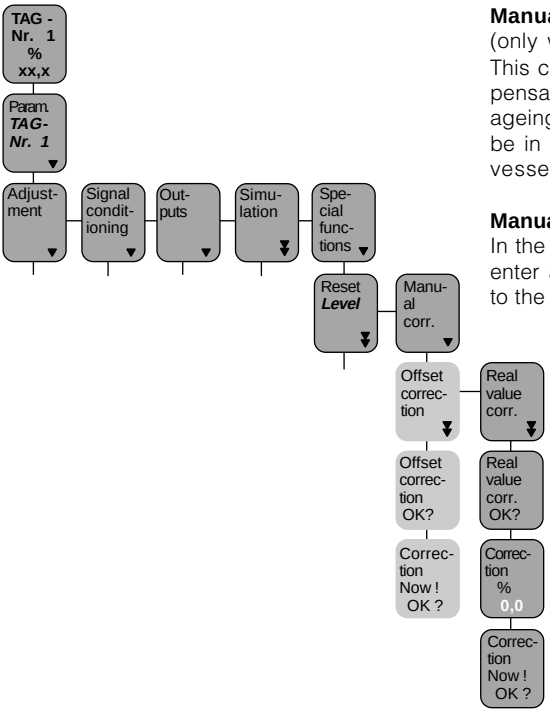

With this reset, all parameter values of the measurement loop TAG-No. 1 are reset to factory settings (empty and full adjustment, relay outputs, current output, volt output and scaling of the meas. value indication are reset).

## 7.9 Password, language, menu mode

See chapter "6 Settings in the Reduced menu“.



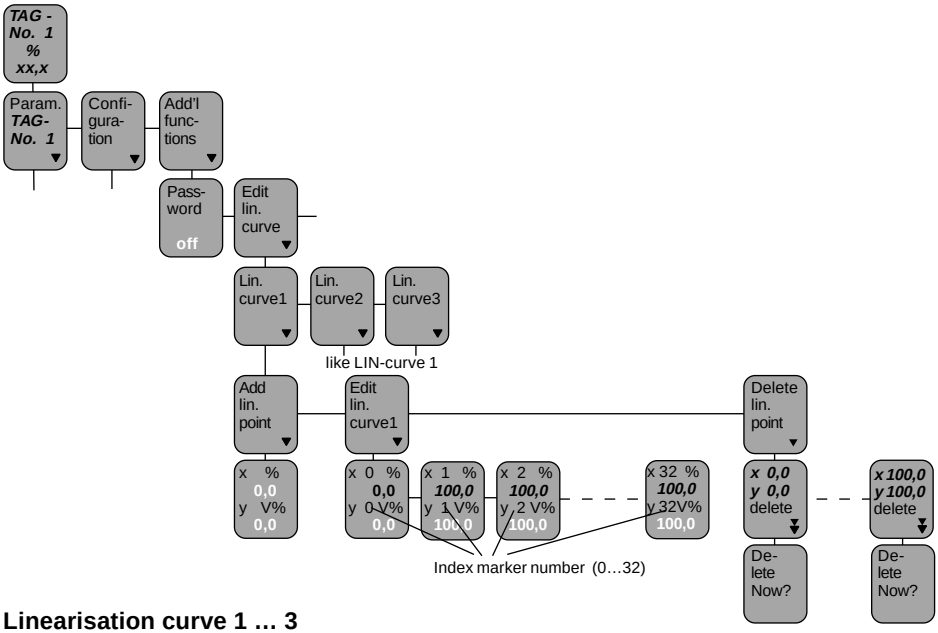

## 7.10 Special function: Manual correction




**Manual offset correction**
(only with hydrostatic pressure transmitters)
This correction can be carried out to compensate changes of the sensor values due to ageing. In order to do this, the sensor must be in an unpressurized condition (empty vessel).

**Manual real value correction**
In the menu item "Correction % 0.0“, you can enter a percentage value which corresponds to the actual level.

## 7.11 Linearisation curves




### Linearisation curve 1 ... 3

A linearisation curve is generated by a certain number of index markers and their value pairs. A value pair consists of a value for level percent (X %) and a value for volume percent (Y V %). Up to max. 32 index markers can be added. A linearisation curve can be terminated after any individual number of index markers. The signal conditioning instrument terminates the linearisation curve automatically with the values X = 100 % and Y = 100 %.

The data for the value pairs can be determined by incremental filling or can be taken from a table of values provided by the vessel manufacturer.

**An example of incremental filling**
Initial situation:
- you have already carried out the 0 % and 100 % adjustment
- the total volume of the vessel is known to you, for example 300 $m^3$
- the gauging volume in this example was set at 15 $m^3$

1st index marker
- fill the vessel with the liquid quantity of the gauging volume of 15 $m^3$
- the value for level percent is indicated on VEGAMET, transfer this value into the linearity protocol, column X %
- the value for volume percent must be calculated acc. to the following formula

$$Y\ 1\ V = \frac{100\ \%\ \text{x gauging volume}}{\text{total volume}}$$

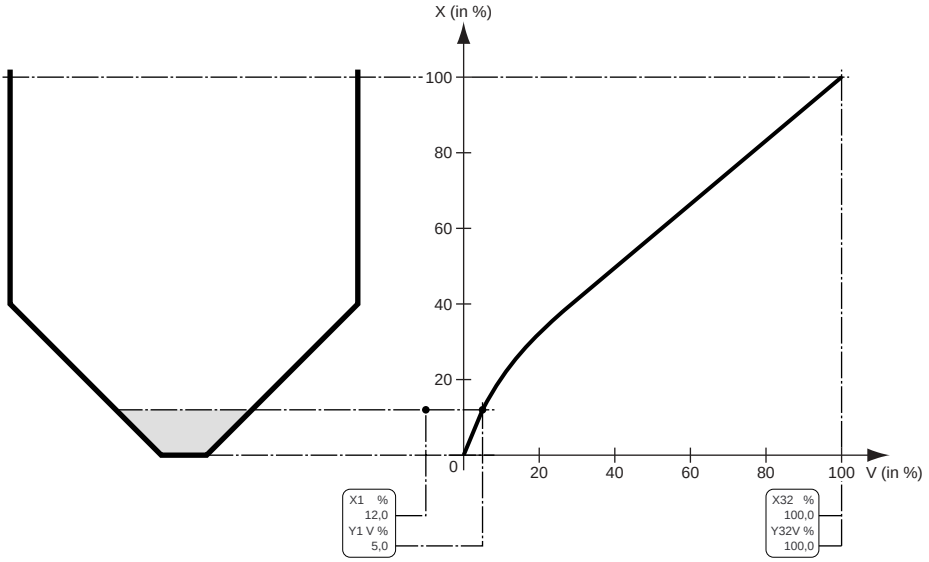
$$= \frac{100\ \%\ \text{x}\ 15\ m^3}{300\ m^3} = 5\ \%$$

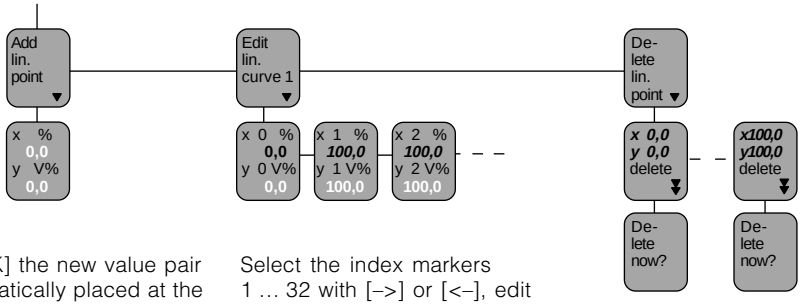
Transfer this value also into the linearity protocol, column Y V %.

2nd index marker, etc.

See also the following illustration.

**Illustration of a linearisation curve**




With [OK] the new value pair is automatically placed at the correct position in the linearisation curve. The already present index markers are re-sorted.

Select the index markers 1 ... 32 with [–>] or [<–], edit the Y value with [+] or [–], accept with [OK].

To delete the index markers, select the value pairs with [–>] or [<–]. With [OK] the value pair and the corresponding index marker are deleted from the lin. curve. The remaining index markers move up.

## Linearity protocol

A linearisation curve is entered in the menu item "Add. lin. point“.

### Linearisation curve 1

| Index marker no. | Value pair X % | Y V % |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |
| 21 | | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |
| 29 | | |
| 29 | | |
| 30 | | |
| 31 | | |
| 32 | | |

### Linearisation curve 2

| Index marker no. | Value pair X % | Y V % |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |
| 21 | | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |
| 29 | | |
| 29 | | |
| 30 | | |
| 31 | | |
| 32 | | |

### Linearisation curve 3

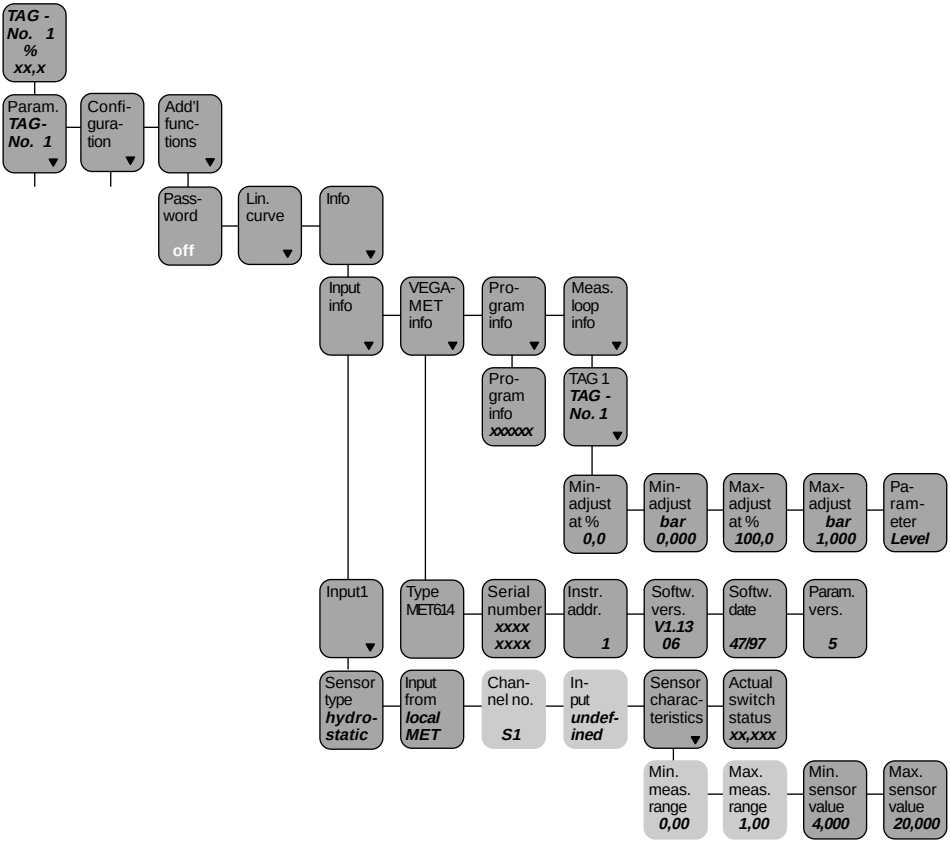
| Index marker no. | Value pair X % | Y V % |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |
| 21 | | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |
| 29 | | |
| 29 | | |
| 30 | | |
| 31 | | |
| 32 | | |

Note

Date

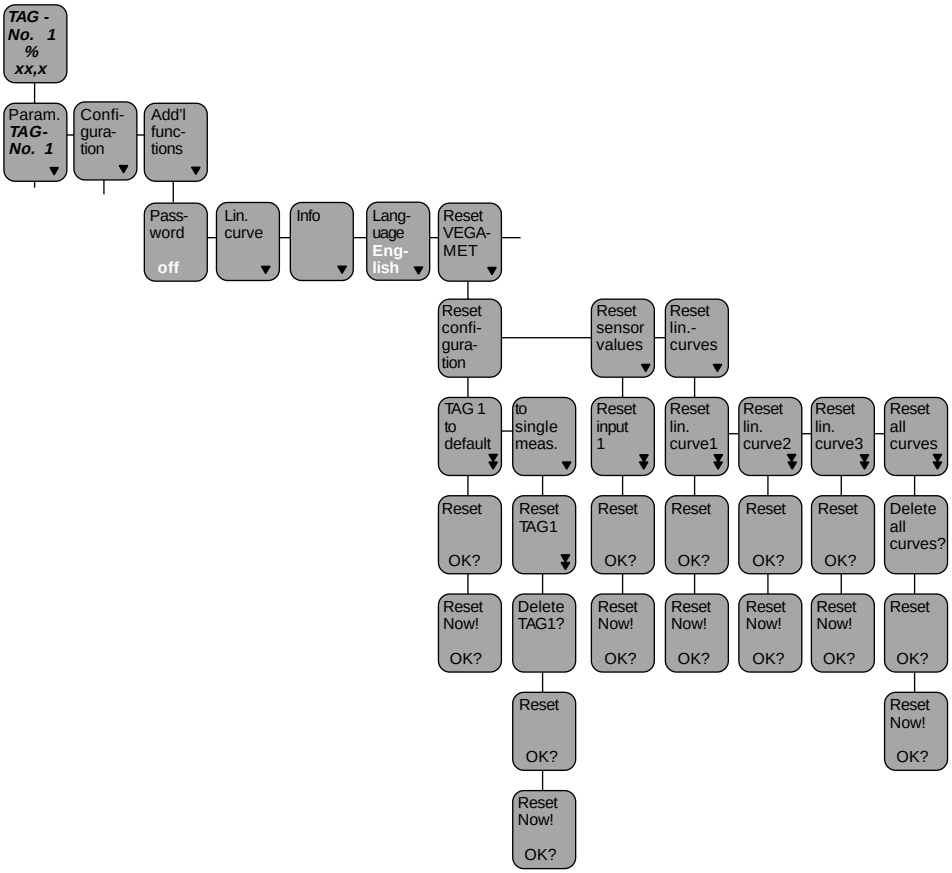
Name

## 7.12 Info




All menu items under "Info“ only have display function.

## 7.13 Reset VEGAMET




With the function "**TAG 1 to default**“, you reset the whole configuration and all parameter adjustments to factory setting. However, the basic configuration remains, e.g. "Level measurement/Hydrostatic“.

With the function "**Reset TAG 1**“, the basic configuration is also deleted. Then, the measurement loop must be created completely anew (config. meas. loop).

With the function "**Reset sensor values**“, you delete the entered sensor data of the connected sensor.

With the function "**Reset lin-curves**“, you can delete your manually edited linearisation curves.

With "Reset all curves“, you delete all together, with "Reset lin-curve 1“ you always delete only one curve.

The three pre-programmed lin-curves "linear, horiz. cylindrical tank, spherical tank“ cannot be deleted.

# 8 Measured quantity and units

With all outputs and with scaling, you find the menu items "prop. to" and "Unit". Here you can choose a meas. quantity and a suitable unit. The list of the units depends on the selected meas. quantity. In the table, the available units are listed.

### Current/Volt output

| prop. to | Unit |
|---|---|
| Percent | 0.0 % |
| Volume | V % |

### VEGADIS/DCS/MET indication

| prop. to | Unit |
|---|---|
| Percent | 0.0 % |
| | 0.00 % |
| Volume | V % |
| Height | m |
| Pressure | bar |
| scaled | (like with scaling) |

### Relay outputs

| prop. to | Unit |
|---|---|
| Percent | 0.0 % |
| Volume | V % |
| Height | m |
| Pressure | bar |

### Scaling

| prop. to | Unit |
|---|---|
| Percent | % |
| Volume | $m^3$ |
| | hl |
| | l |
| | gal |
| | V % |
| | $ft^3$ |
| | $in^3$ |
| Height | m |
| | dm |
| | cm |
| | mm |
| | yd |
| | ft |
| | in |
| Pressure | bar |
| | mbar |
| | psi |
| | hPa |
| Mass | kg |
| | t |
| | lb |
| Density | $kg/dm^3$ |
| | $g/cm^3$ |

# 9 Diagnosis

## 9.1 Maintenance

The instrument is maintenance-free.

## 9.2 Simulation

**Note**
When the simulation is activated, the entire display flashes. The measurement data delivered by the sensors are not released for processing. You should, therefore, quit this menu item as soon as possible. After 15 minutes, there is an automatic reset to meas. value indication.

## 9.3 Fault signal

The signal conditioning instrument and the connected sensor are continuously monitored during operation. During parameter adjustment, the adjusted values are checked for plausibility. In both cases, a fault signal can be triggered by irregularities.

In case of failure, an error code is displayed (only within the meas. value indication), the fail safe relay deenergises, the signal lamp lights and the outputs react according to their preset operational mode.

The error codes are listed in section "9.5 Error codes“ on the following pages.

The diagnosis info is transmitted as a scrolling text info.

**Configuration**
For each individual measurement loop, you can determine if a fault signal should be triggered or not. See menu range "Configuration measurement loop“, menu item "Fault signal“.

**Parameter adjustment**
In the menu item "Failure mode“ you can determine individually for each measurement loop whether and how an overrun of the measuring range should trigger a fault signal.

## 9.4 Repair

For safety and warranty reasons, any internal work on the instruments, apart from that involved in normal installation and electrical connection, must be carried out only by VEGA personnel.

In case of defect, please return the affected instrument with a short description of the fault to our repair department.

## 9.5 Error codes

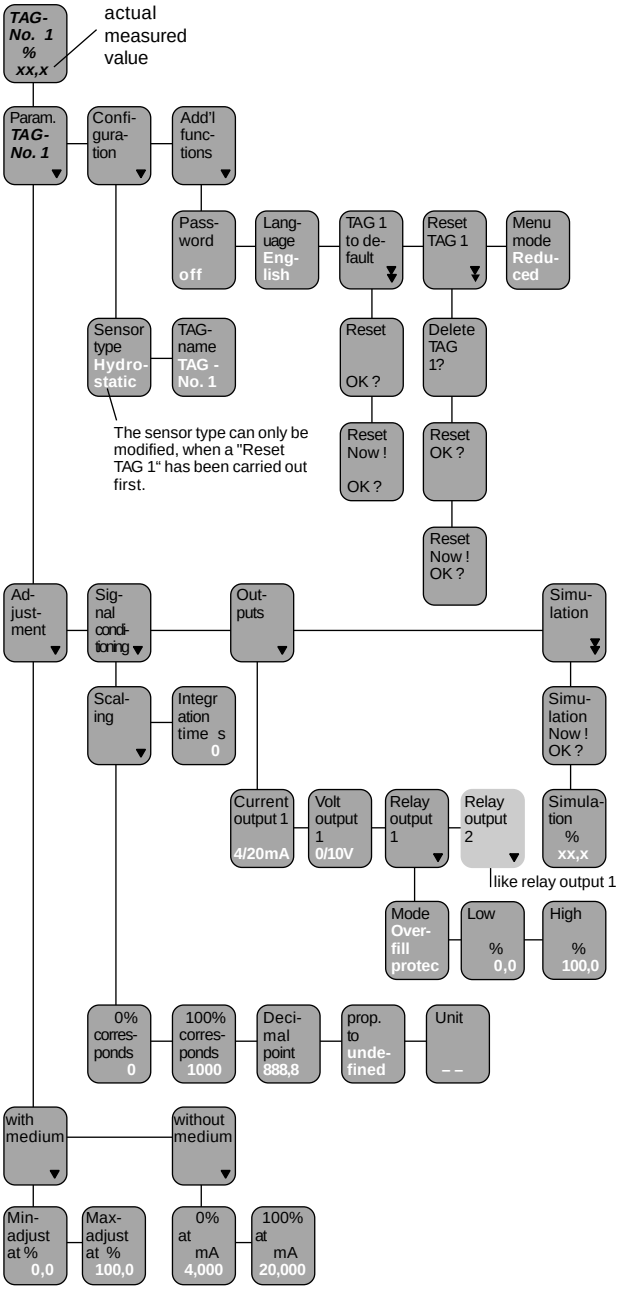
| Error code | Meaning |
|---|---|
| E004 | This operation is not supported by the instrument (different software versions). You have tried to activate a function with a newer software version of VEGA Visual Operating in an instrument with older software version. However, the instrument cannot support this operation.<br>Have the software of your instrument updated. |
| E014 | Possible short-circuit<br>Probable reasons:<br>- short-circuit<br>- sensor is defective<br>Check the connection cable and, if necessary, the sensor.<br>Also possible<br>- an incorrect measuring range is adjusted on the capacitive electrode.<br>Adjust a smaller range. |
| E015 | Possible short-circuit<br>Probable reasons:<br>- no sensor connected<br>- line break<br>- sensor is defective<br>Check the connection cable and, if necessary, the sensor. |
| E016 | Empty/full adjustment reversed. The values of the empty adjustment are above the values of the full adjustment. Carry out the adjustment again. |
| E017 | Adjustment span too small. The adjustment values are too close together or are identical. Carry out the adjustment again. |
| E021 | Span of the scaling values too small or values reversed. The scaling values are too close together or are identical. Please check the scaling. |
| E022 | Scaling span too big. |
| E027 | Actual measured value is less than -10 %. |
| E28 | Actual measured value is more than 110 %. |
| E031 | Same DISBUS address. At least one other instrument with the same DISBUS address is connected to the DISBUS. Please check the DISBUS address. |
| E032 | Instrument address 0. Instrument address 0 is set on VEGAMET. With this address, VEGAMET does not participate in the DISBUS communication, even if the DISBUS is wired. If necessary, modify the instrument address. |
| E034 | Instrument error. A considerable error was detected in the instrument (possibly defective EEPROM). Disconnect voltage and then connect again (cold start). If the error is not eliminated, please contact your VEGA agency. |

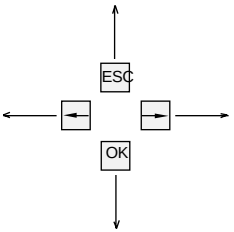
| Error code | Meaning |
|---|---|
| E035 | Instrument error. A serious error was detected in the instrument (check sum error in EPROM). Disconnect voltage and then connect again (cold start). If the error is not eliminated, please contact your VEGA agency. |
| E050 | Remote VEGAMET not found. The VEGAMET from which a measured value is expected cannot be found.<br>Reasons:<br>- the remote VEGAMET is not connected<br>- no VEGAMET with this instrument address connected<br>- line break (DISBUS)<br>- short-circuit (DISBUS)<br>- the remote VEGAMET is defective<br>- interfered communication (DISBUS)<br>Also possible:<br>- failure in the DISBUS transmitter/receiver part of VEGAMET<br>Please check the instrument address on both VEGAMETs, the connection cable, the remote VEGAMET and, if necessary, this VEGAMET. |
| E051 | Failure during transmission of measured values via DISBUS. It is not possible to receive a valid measured value via DISBUS from the remote VEGAMET; the communication with the remote VEGAMET, however, is okay.<br>Reason:<br>- failure on remote VEGAMET<br>- the input of the remote VEGAMET, which should be transmitted to, is not yet configured<br>Please check the remote VEGAMET and, if necessary, its input configuration. |
| E052 | The input number of the VEGAMET from which a measured value is expected has not yet been assigned. |
| E053 | Span of the sensor characteristics values too small. The sensor characteristics values are too close together or are identical. |
| E054 | Sensor characteristics values reversed. The min. sensor characteristics value is higher than the max. sensor characteristics value. |
| E060 | Span of the current output values too small. The values for the current output are too close together or are identical. Please check the adjustment of the current output. |
| E061 | Span of the voltage output values too small. The values for the voltage output are too close together or are identical. Please check the adjustment of the voltage output. |
| E063 | Incorrect sensor characteristics values. Please check the sensor characteristics values |
| E102 | A reset of the configuration was carried out on this VEGAMET via the keyboard. |

| Error code | Meaning |
|---|---|
| E110 | Switching hysteresis too small. The switching points are too close together or are identical. |
| E111 | Relay switching points swapped. The relay switching points are reversed with respect to the selected relay mode. |

# 10 Menu schematics

## 10.1 Menu schematic “reduced menu”




With these keys you move in the menu field

Language English

In white letters you can see the parameters which can be modified with the [+] or [–] key and saved with the [OK] key.

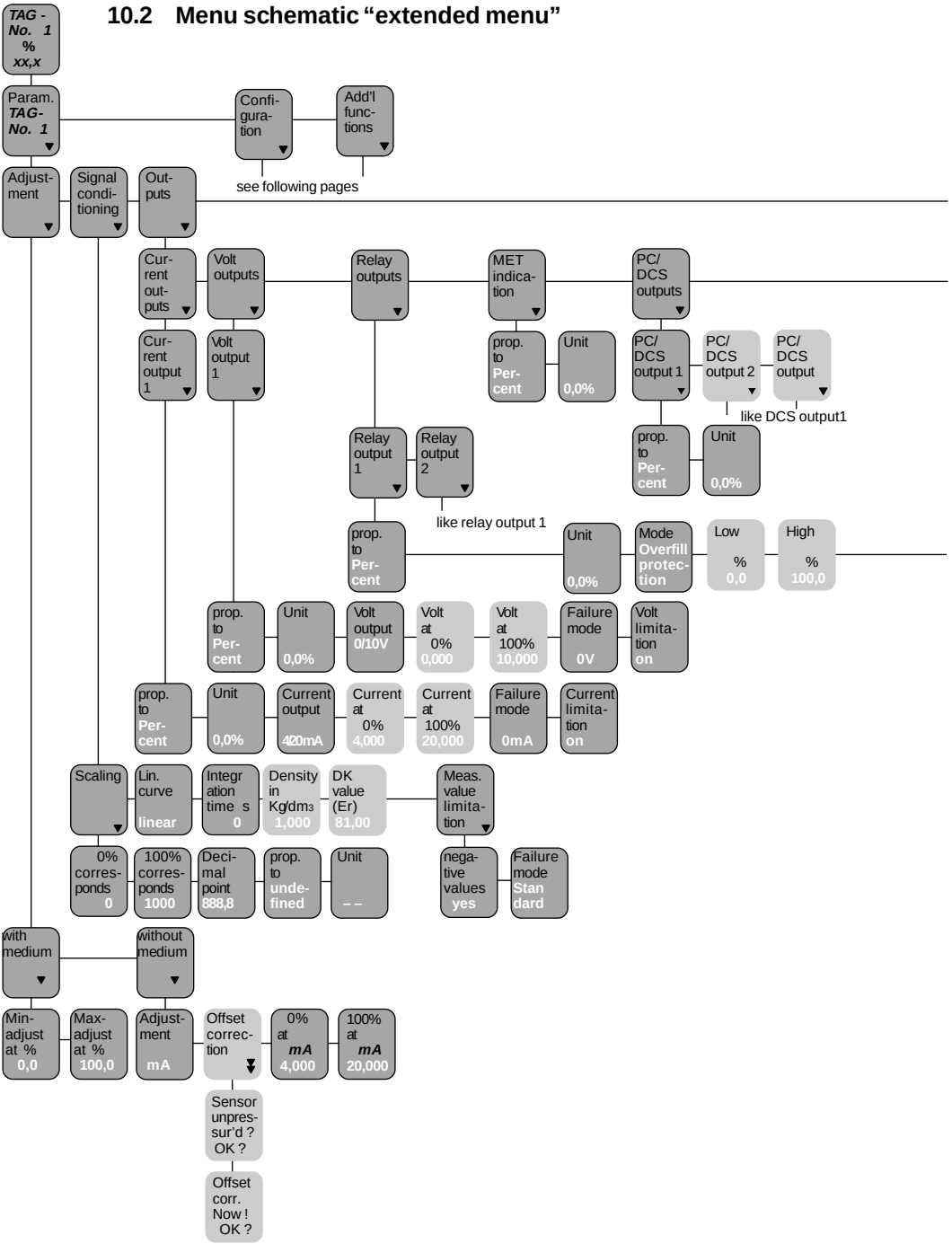
Param. *TAG No. 1*

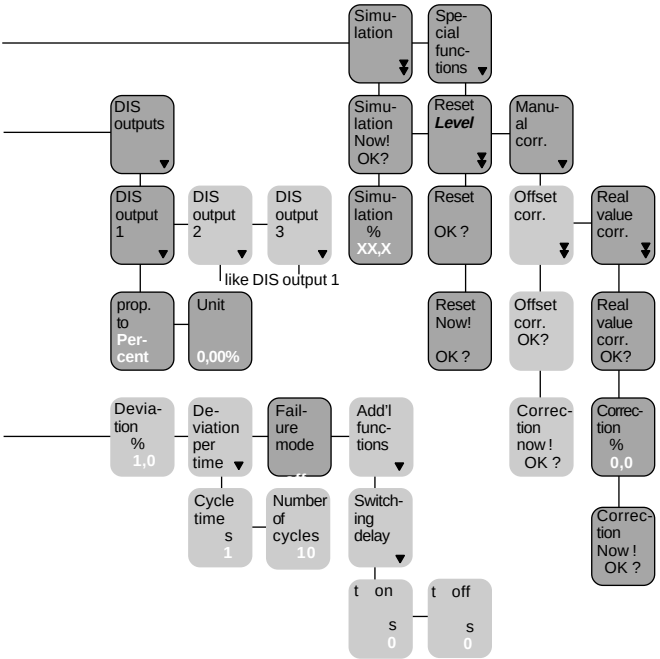
Bold print/italic is the sensor or measured value information which cannot be modified in this position.

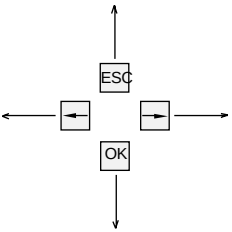
Relay output 2

Light grey menu items are only displayed if necessary (depending on the adjustment in other menu items).

## 10.2 Menu schematic “extended menu”





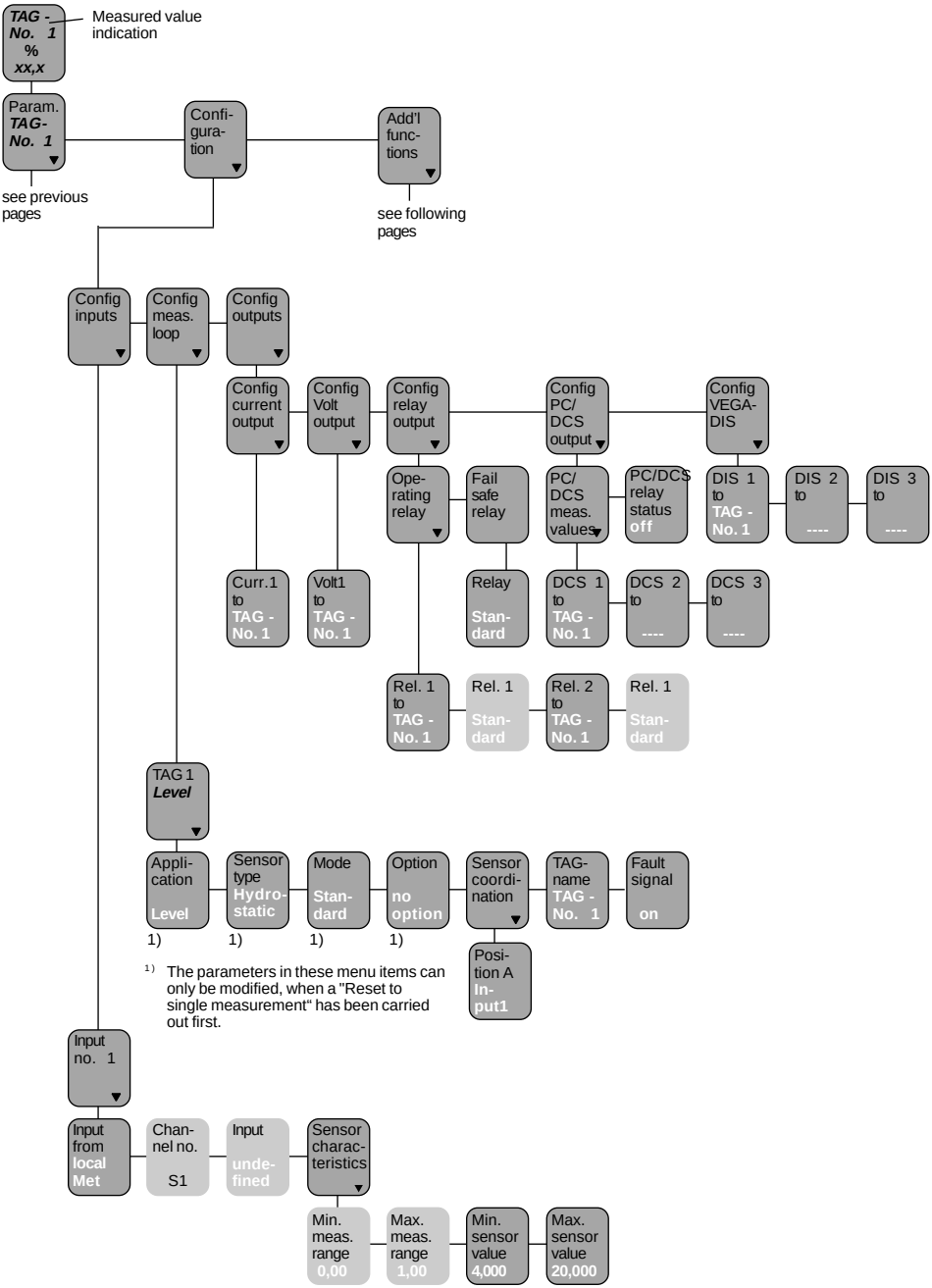



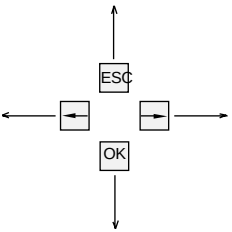

With these keys you move in the menu field

Bold print/italic is the sensor or measured value information which cannot be modified in this position.

In white letters you can see the parameters which can be modified with the [+] or [–] key and saved with the [OK] key.

Light grey menu items are only displayed if necessary (depending on the adjustment in other menu items).


TAG - No. 1
%
xx,x
Measured value indication
Param. TAG- No. 1
Confi-gura-tion
Add'l func-tions
see previous pages
see following pages
Config inputs
Config meas. loop
Config outputs
Config current output
Config Volt output
Config relay output
Config PC/ DCS output
Config VEGA-DIS
Ope-rating relay
Fail safe relay
PC/ DCS meas. values
PC/DCS relay status off
DIS 1 to TAG - No. 1
DIS 2 to ----
DIS 3 to ----
Curr.1 to TAG - No. 1
Volt1 to TAG - No. 1
Relay Stan-dard
DCS 1 to TAG - No. 1
DCS 2 to ----
DCS 3 to ----
Rel. 1 to TAG - No. 1
Rel. 1 Stan-dard
Rel. 2 to TAG - No. 1
Rel. 1 Stan-dard
TAG 1 Level
Appli-cation Level
Sensor type Hydro-static
Mode Stan-dard
Option no option
Sensor coordi-nation
TAG-name TAG - No. 1
Fault signal on
1)
Posi-tion A In-put1
1) The parameters in these menu items can only be modified, when a “Reset to single measurement“ has been carried out first.
Input no. 1
Input from local Met
Chan-nel no. S1
Input unde-fined
Sensor charac-teristics
Min. meas. range 0,00
Max. meas. range 1,00
Min. sensor value 4,000
Max. sensor value 20,000




With these keys you move in the menu field

Sensor type ***Hydro-static***

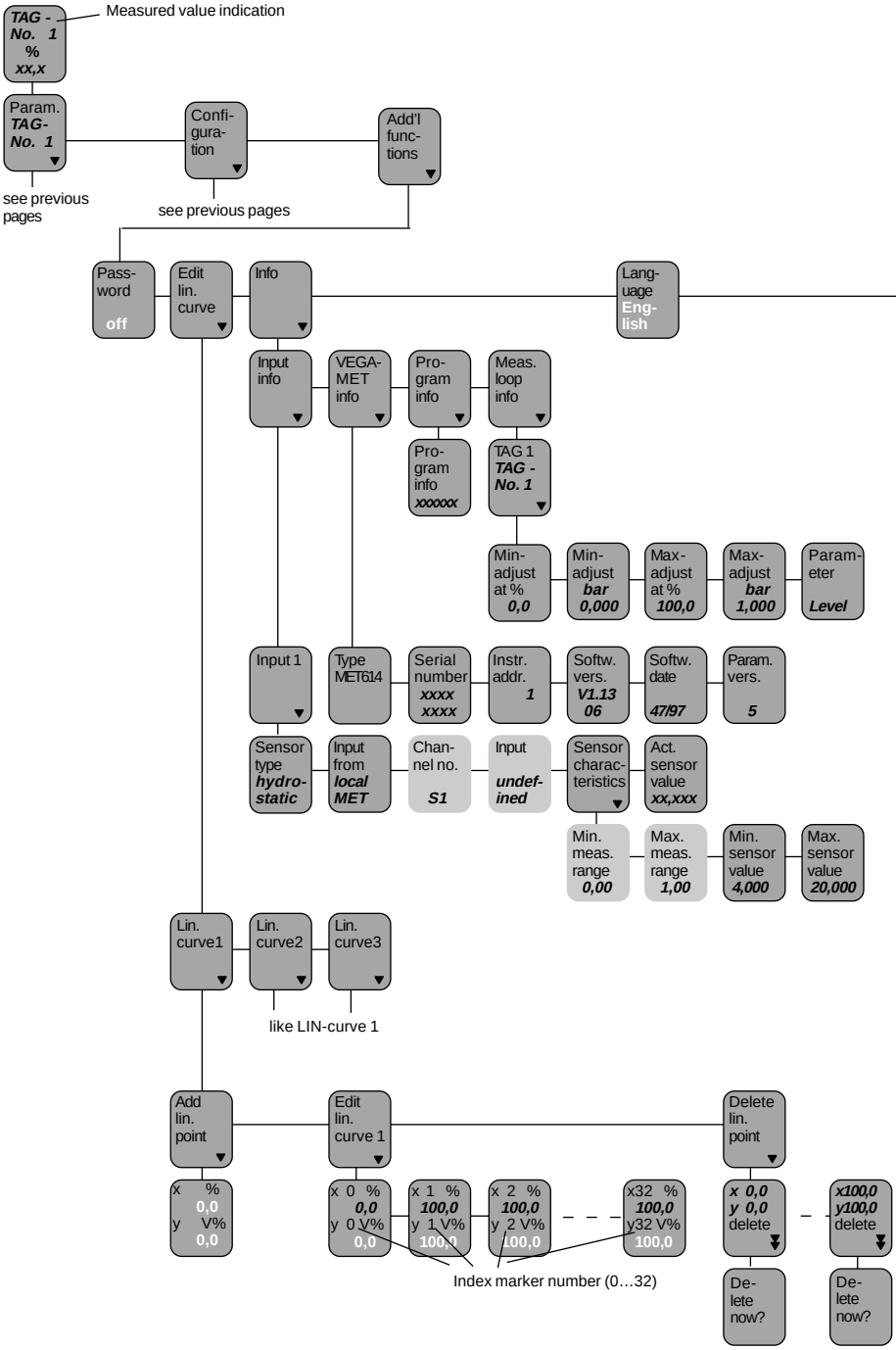
Bold print/italic is the sensor or measured value information which cannot be modified in this position.

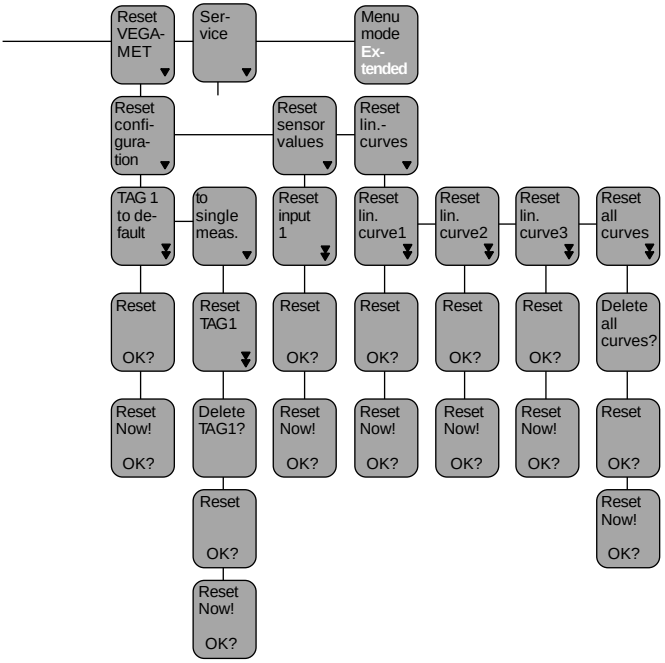
Lang-uage **Eng-lish**

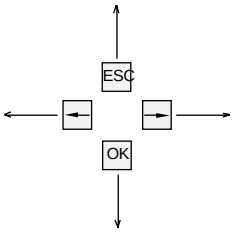
In white letters you can see the parameters which can be modified with the [+] or [–] key and saved with the [OK] key.

Cur-rent at 100% 20,000

Light grey menu items are only displayed if necessary (depending on the adjustment in other menu items).


TAG - No. 1 % xx,x
Measured value indication
Param. TAG-No. 1
Configuration
Add'l functions
see previous pages
see previous pages
Password off
Edit lin. curve
Info
Language English
Input info
VEGAMET info
Program info
Meas. loop info
Program info xxxxx
TAG 1 TAG - No. 1
Min-adjust at % 0,0
Min-adjust bar 0,000
Max-adjust at % 100,0
Max-adjust bar 1,000
Parameter Level
Input 1
Type MET614
Serial number xxxx xxxx
Instr. addr. 1
Softw. vers. V1.13 06
Softw. date 47/97
Param. vers. 5
Sensor type hydrostatic
Input from local MET
Channel no. S1
Input undefined
Sensor characteristics
Act. sensor value xx,xxx
Min. meas. range 0,00
Max. meas. range 1,00
Min. sensor value 4,000
Max. sensor value 20,000
Lin. curve1
Lin. curve2
Lin. curve3
like LIN-curve 1
Add lin. point
Edit lin. curve 1
Delete lin. point
x % 0,0 y V% 0,0
x 0 % 0,0 y 0 V% 0,0
x 1 % 100,0 y 1 V% 100,0
x 2 % 100,0 y 2 V% 100,0
x32 % 100,0 y32 V% 100,0
x 0,0 y 0,0 delete
x100,0 y100,0 delete
Index marker number (0…32)
Delete now?
Delete now?




With these keys you move in the menu field

Sensor type ***Hydro-static***

Bold print/italic is the sensor or measured value information which cannot be modified in this position.

Lang-uage **Eng-lish**

In white letters you can see the parameters which can be modi-fied with the [+] or [–] key and saved with the [OK] key.

Cur-rent at 100% **20,000**

Light grey menu items are only displayed if necessary (de-pending on the adjustment in other menu items).

VEGA

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## Safety information

Please read this manual carefully, and also take note of country-specific installation standards (e.g. the VDE regulations in Germany) as well as all prevailing safety regulations and accident prevention rules.
For safety and warranty reasons, any internal work on the instruments, apart from that involved in normal installation and electrical connection, must be carried out only by qualified VEGA personnel.

## Note Ex area

Please note the attached safety instructions containing important information on installation and operation in Ex areas.
These safety instructions are part of the operating instructions and come with the Ex approved instruments.

For more VEGA product please visit: www.ainstru.com
Mail: Sales@ainstru.com

ISO 9001 VEGA

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the latest information at the time of printing.

Technical data subject to alterations