

Safety Information

- Comply with ESD protection measures!
- Avoid short-circuits on the PCB!
- Route connecting cables only through the bush sleeves of the meter!
- Do not squeeze the cables by the cover!
- Do not cut the bush sleeves shorter than necessary because this may lower the degree of protection!
- Main supply should only be connected to terminals 27 and 28!
- When connecting turn off the main supply!
- The operation power supply must be provided with an overcurrent protection.

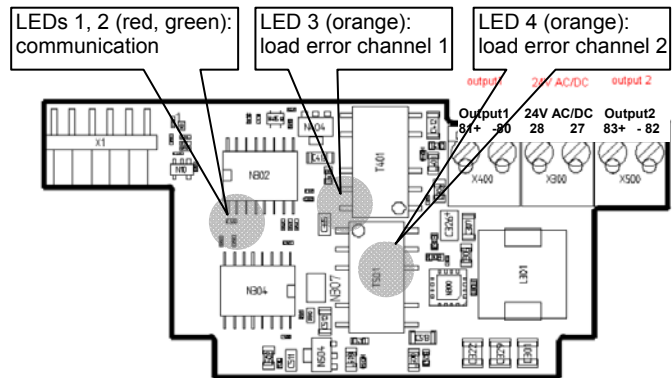
1 Description of functions

The analog module WZU-AM converts the measured value from the heat meter to an analog signal. Each module is provided for two channels which functions may be configured independent of each other.

Parameterization (selection of measured value and output range) is performed with the service software.

The output signal is updated every 4 seconds.

Light-emitting diodes (on the reverse side of the module) show the current operating status.



An external plug-in power supply unit must provide the module with power (not included in the scope of supply of the module).

The analog module is an add-on module for meter of the type T550 (UH50...), W550 (UW550...) and T550 (UC50...).

The module is available in one version:

- WZU-AM

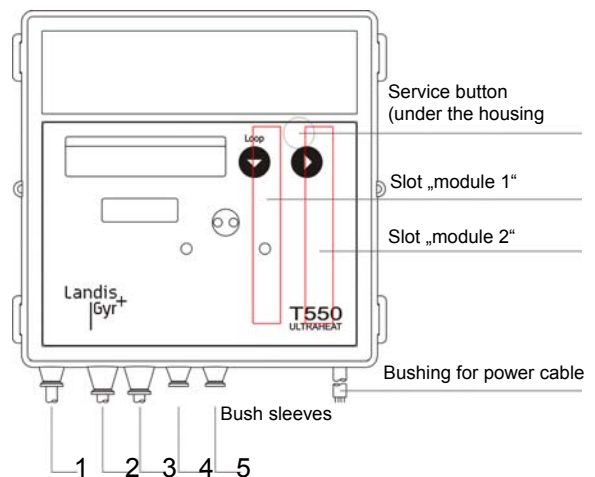
2 Installation and assembly

The meter has two module slots for additional modules. These are named „module 1“ and „module 2“ on the dial plate (visible after removing the cover).

The analog module may be fitted on the slot „module 1“ as well as in the slot „module 2“. Two modules can be used simultaneously (see restriction under „power supply“).

Exception: In case of power supply 110 V / 230 V the module cannot be used in slot 2!

The outer diameter of the cable must be between 4 mm and 7 mm. All cables have to be routed through the existing bush sleeves 4, 5 in the meter. It may be convenient to connect the cables before the meter in a single multi-conductor cable on a splitting box. Pay attention to the splash guard!



It may be convenient to combine the several cables in a single multi-conductor cable in a splitting box.



If a shielded cable is used for output signal: The shield must not be connected to the meter (only one-sided should be connected).

3 Technical Data

Power supply range:	12...30 V AC 12...42 V DC
Power supply protection:	
< 24V	200 mA, slow blow
≥ 24V	100 mA, slow blow
Max. current consumption:	170 mA @ 12 Volt
Power consumption:	max. 2 Watt
Max. output load:	300 Ohm for current output, 2kOhm for voltage output (outputs are short circuit proof)
Accuracy:	≤ ± 1% of parameterized maximal value
Max. length of connections:	100 m
Outer diameter of connections:	up to 1.5 mm ²

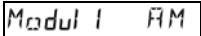


The meter must be powered by either a type D cell battery or by a main power supply (see "Power Supply")!

4 Display on the LCD of the meter

The following displays are examples and may differ from the actual display list of the meter.

Service loop 4 („LOOP 4“)

 Type „AM“ in slot „module 1“ and/or

 Type „AM“ in slot „module 2“

5 Power supply

The power supply for the module is connected to the terminals 27 (~) and 28 (~). The two lines may be attached in any order.



Alternate current: allowed range 12..30 Volt
Direct current: allowed range 12..42 Volt

If two analog modules are used, they may be operated from a common power source. If the meter is supplied with main power (24 V), the module(s) and the meter can be supplied commonly. In this case the wires must be joined at the side of the module; the terminals of the supply unit of the meter are not suited for this purpose.



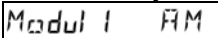
If a meter is provided with an analog module, it must be powered – in case of battery – by a 6 year type of D cell (“for all applications”; “WZ-BD”). This is particularly important when subsequently including the analog module functionality in an existing meter!

Meters ordered and delivered with a factory attached analog module already contain the correct battery type.



Die CE compliance (“CE sign“) is only valid in combination with the original power supply unit (see order information).

6 Start-up

After turning on the power, the meter will automatically detect and classify the module as an „analog module“. The meter then displays the following information: 

When powering on, it needs up to 2 minutes until the analog module is synchronized with the meter and the output values are stable.

6.1 LED's signals after successful synchronization

Synchronization has been completed when the LED's 1 ("red") and 2 ("green") flash in a 4 second pattern.

- green: data request to meter; remains lit until data has been received
- red: data being received from the meter; flashes shortly

6.2 LED's signals in case of a failure

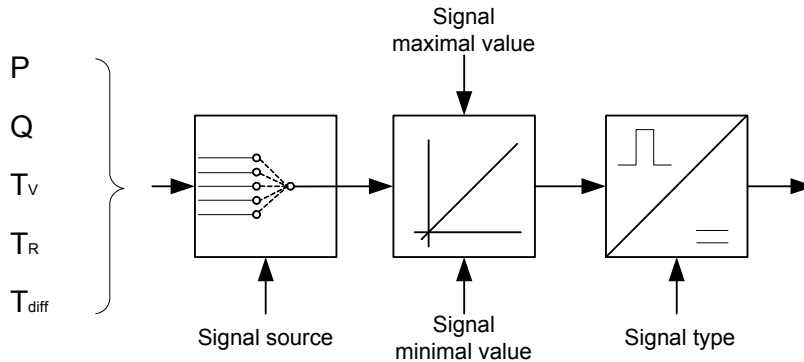
In case of failure, the LED "green" stays lit and LED "red" is blinking. The output value is frozen (values as before).

The orange LED's 3 and 4 show load error for each channel (burden too high for current output or load too low for voltage output). As long as these orange LED's are off, the load is stable.

If the meter detects invalid values (e.g. meter cannot calculate power, meter shows error "F0" etc.), the corresponding output is – depending on signal type – set to the following values:

Signal type	Output value in case of error
0..10 V with/without overflow	0 V
0..20 mA with/without overflow	0 mA
4..20 mA without over-/underflow	4 mA
4..20 mA with over-/underflow	3.5 mA

7 Block diagram



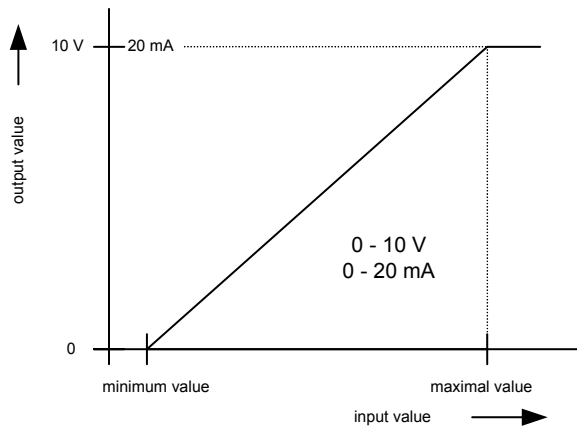
P = power; Q = flow; T_V = temperature flow; T_R = temperature return; T_{diff} = difference temperature

8 Output

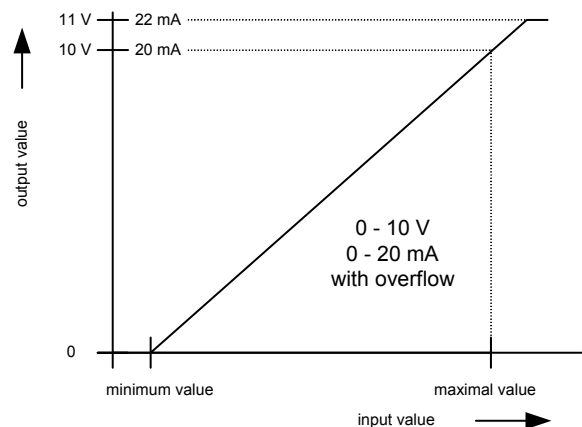
Connecting analog output:

- Channel 1 („Output 1“) terminal 80 (-) and terminal 81 (+)
- Channel 2 („Output 2“) terminal 82 (-) and terminal 83 (+)

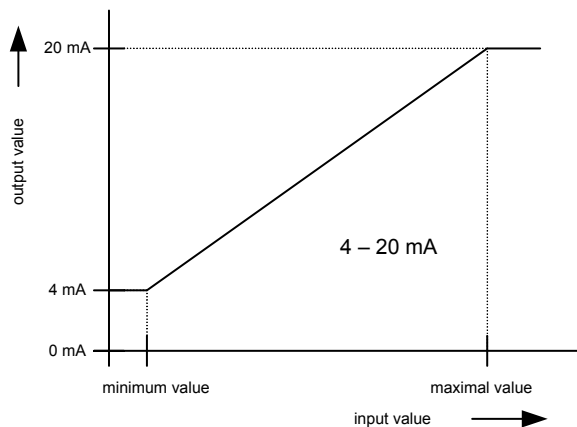
The output characteristic may optionally work with an underflow-/overflow function. In case of underflow resp. overflow, any value lower than the minimal resp. any value higher than the maximal value will be detected.



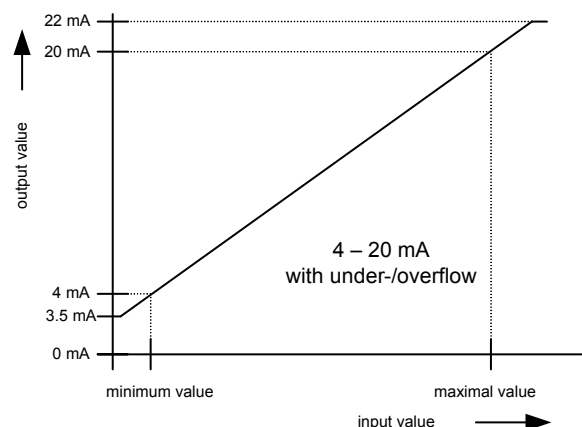
signal type 0..10 V or 0..20 mA, no overflow



signal type 0..10 V or 0..20 mA, with overflow

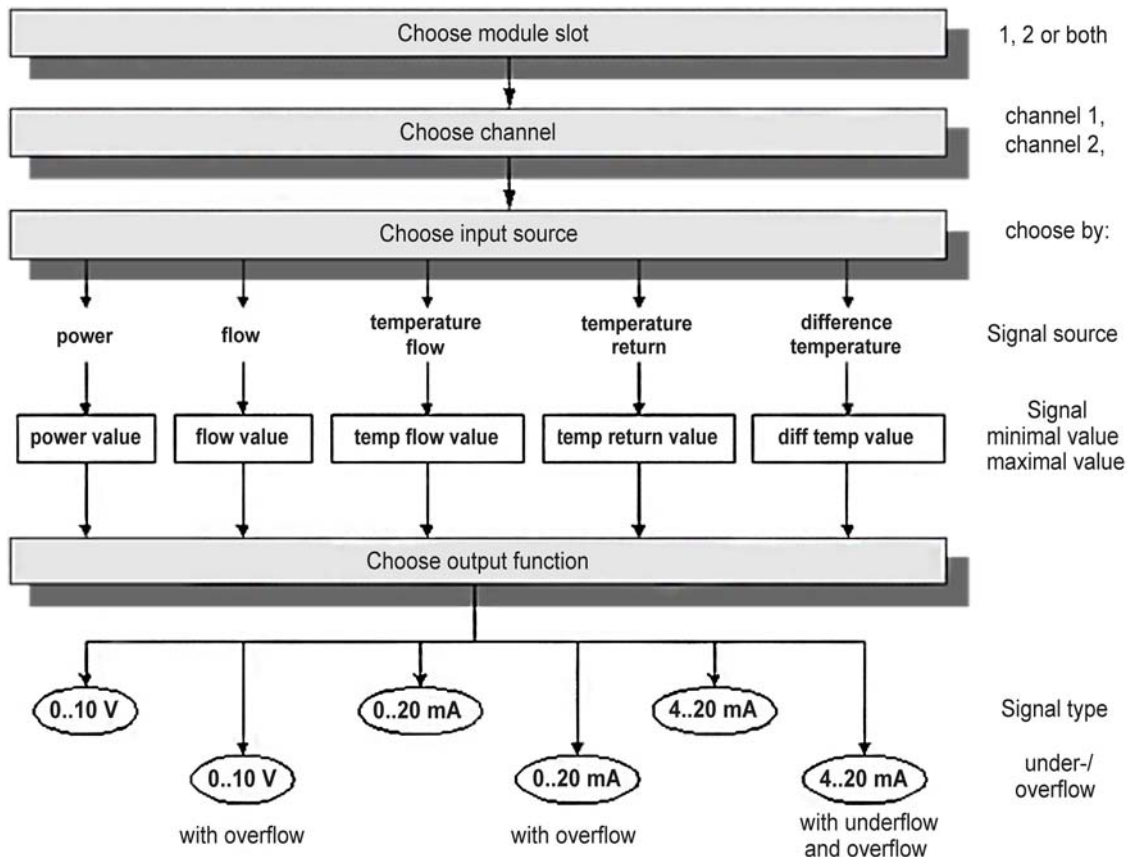


signal type 4..20 mA, no underflow, no overflow



signal type 4..20 mA, with under-/overflow

9 Parameterization by service software





To program the module it must be in the state of “Pb” or “Eb”. This may be done e.g. by pressing the service button of the UH50 for at least 3 seconds.

Therefore the option “Analog Module” has to be activated in the parameterization menu.

In the following dialog, the recognized count of mounted modules and their parameters will be shown. The parameterization may also be done if the module has not been inserted.

The screenshot shows the 'Analogmodul parametrieren' dialog box. It has a title bar with a green save icon and a red close icon. The main area is divided into several sections. At the top left, there are four radio buttons for selecting the module slot: 'No analog module', 'Analog module at module slot 1' (selected), 'Analog module at module slot 2', and 'Analog modules at module slot 1 and 2'. Below this, there are four sections for module slots. The first section, 'Module slot 1', is active and shows 'Channel 1' with 'Signal type' set to '0 to 20mA (with overflow 0 to 22mA)' and 'Signal source' set to 'Power'. The 'Signal minimal value' is '0000001.0 kW' and the 'Signal maximal value' is '0000002.0 kW'. The other three sections ('Module slot 2', 'Channel 1', and 'Channel 2') are inactive and show 'No signal type selected' and 'No signal source selected'. At the bottom are 'Ok', 'Cancel', and 'Apply' buttons.

Procedure of parameterization:

1. Choose the slot ("module 1" / "module 2" / both)
Fields of not used module are shown inactive.
2. Set **Signal type** for output (current, voltage, underflow, overflow)
3. Set **Signal source** (Flow, power, temperature difference, temperature flow, temperature return)
4. Set signal range for scaling (**Signal minimal value**, **Signal maximal value**)

Steps 2, 3 and 4 should be done for each defined channel.

When all values have been determined, press the “OK” button. This initializes the communication with the meter and closes the dialog box.

The button “Apply” also starts the communication with the meter, but the dialog box stays opened for further parameterization.



Parameterization is not effective until the analog module has been initialized. This is reached by a shortly interrupt of the power supply of the module.

Not parameterized modules have an output voltage of null volts (default signal type 0...10 V).



At the combined heat-/cold meter the output for the signal source **power** and **temperature difference** is for the **cooling application** not possible!

10 Ordering data

as accessory:

WZU-AM

for meter T550 (UH50...) with module: UH50-xxxx-xxxx-xxx-XYZx-xxx
for meter W550 (UW50...) with module: UW50-xxxx-xxxx-xxx-XYZx-xxx
for meter T550 (UC50...) with module: UC50-xxxx-xxxx-xxx-XYZx-xxx

Y = A for analog module in slot "module 1"
Z = A for analog module in slot "module 2"

X = „B“ for battery powered

X = „M“ for power supply 24V AC/DC with plug
X = „N“ for power supply 230V AC with 1,5m cable
X = „P“ for power supply 230V AC with 5m cable
X = „Q“ for power supply 230V AC with 10m cable
X = „R“ for power supply 110V AC with 1,5m cable
X = „S“ for power supply 110V AC with 5m cable
X = „T“ for power supply 110V AC with 10m cable

external power supply unit: WZR-NE (for module: must always be ordered separately)
6 year battery; D cell: WZU-BD (for meter: if another battery type is built in)

You will also find up-to-date information on our heat meters in the INTERNET at: www.landisgyr.com

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