ZIEHL industrie – elektronik GmbH + Co KG
Daimlerstr.13, 74523 Schwäbisch Hall, Germany
+ 49 791 504-0, info@ziehl.de, www.ziehl.de

Quick Guide MINIPAN 300

updated: 2019-10-07/Sc

- Universal Digital panel meter

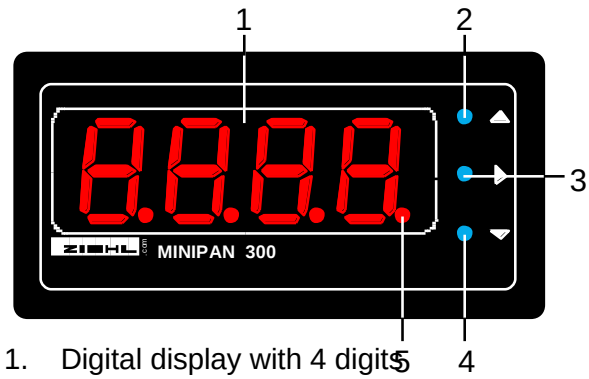
Detailed operating manual see:
https://www.ziehl.com/en/AllProducts/?view=detail&detail=86

1 General Notes

Compliance with the following instructions is mandatory to ensure the functionality and safety of the product. If the following instructions given especially but not limited for general safety, transport, storage, mounting, operating conditions, commissioning and disposal / recycling are not observed, the product may not operate safely and may cause a hazard to the life and limb of users and third parties.

Deviations from the following requirements may therefore lead both to the loss of the statutory material defect liability rights and to the liability of the buyer for the product that has become unsafe due to the deviation from the specifications.

2 Display and controls



1. Digital display with 4 digits
2. Button "Up"
3. Button "Set/Reset“
4. Button "Down"
5. Decimal point behind last digit:
   off = display mode (measured values)
   on = menu mode, select the menu items
   blinking = parameter setting mode

3 Factory-preset:

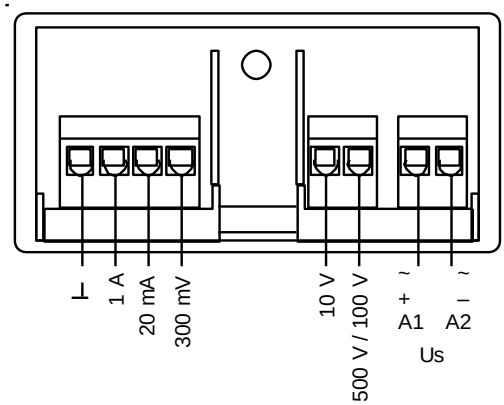
Reset to factory setting: Push button Set for 10 s when applying supply voltage until "----" is displayed.

	Version			
Parameter	**MINIPAN DC**	**MINIPAN AC**	**MINIPAN Pt100**	**Users own Data**
InPU	10	1	-	
L-A	-	-	3-L	
Unit	-	-	°C	
ScAL	AUto	AUto	-	
InLo	0.00	0.000	-	
InHi	10.00	1.000	-	
diLo	0	0	-	
diHi	5000	5000	-	
dP	0000.	0000.	-	
ddiS	0.5	0.5	0.5	
F1	F1	F1	-	
CodE	oFF	oFF	oFF	
Pin	504	504	504	

4 Connection plan

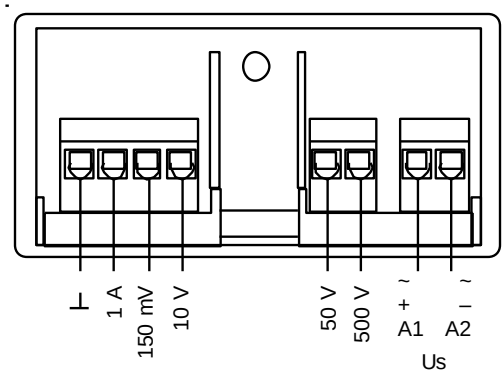
4.1 Inputs DC-Meter:

- Measuring of current with external shunt max. 300 mV
- 1 A for direct measuring of current
- 0/4-20 mA for standard signals
- 0-10 V for standard-signals
- 100/500 V switch able



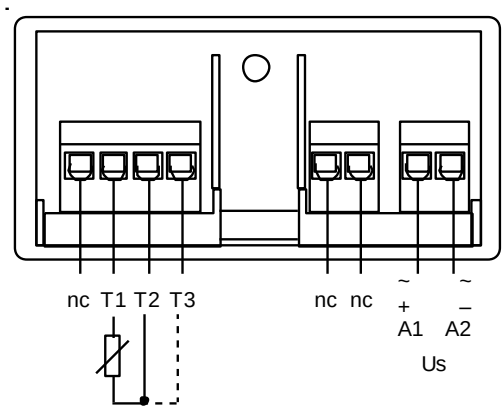
4.2 Inputs AC-Meter:

- 500 V
- 50 V
- 10 V
- Measuring of current with external shunt max. 150 mV
- 1 A for direct measuring of current or with external transformer



4.3 Measuring of Temperature Pt100 (RTD)

- Pt100 in 2- or 3-wire connection
- Measuring Range -199,9 ... +850,0 °C
- Resolution 0,1 °C
- Display in °C or °F



5 Important information's

ATTENTION

Dangerous electrical voltage!
May lead to electrical shock and burn.
Before beginning of work switch unit and equipment free of voltage.

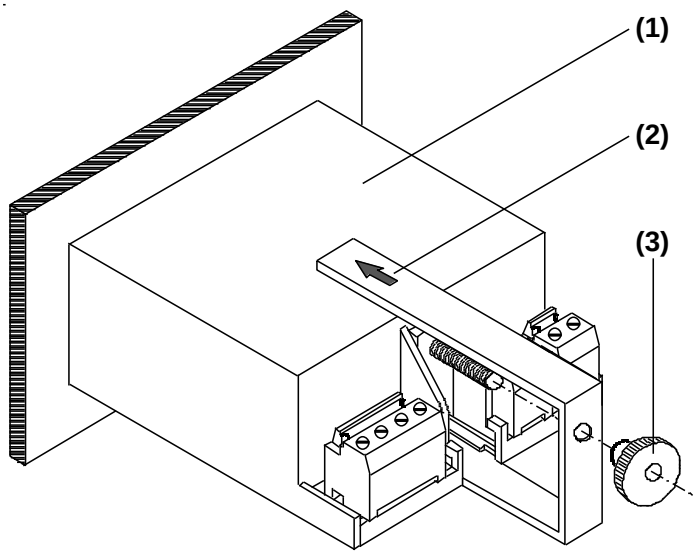
Only let persons work with the equipment who are familiar with installation, start and use and who have appropriate qualification corresponding to their function. They must observe the contents of the instructions manual, the information which are written on the equipment and the relevant security instructions for the setting up and the use of electrical units.
The equipments are built according to DIN / EN and checked and leave the plant according to security in perfect condition.
If, in any case the information in the instructions manual is not sufficient, please contact
our company or the responsible representative.
Instead of the industrial norms and regulations written in this instructions manual valid for Europe, you must observe the valid and relevant regulations of the corresponding country.

The **measuring inputs** is are insulated from supply-voltage but not from each other.
Connect one input only!

Universal power supply.
The device has got a universal power supply, that is suitable for DC- and AC-voltages. Before connecting the device to supply-voltage make sure that the connected voltage corresponds with the voltage on the type plate on the device.

6 Assembly

- Slide-in the MINIPAN 300 (1) into the prepared panel-cut-out ($33^{+0,6}$ x $68^{+0,7}$ mm) from the front side.
- Slide the holding clamp (2) over the screw from the backside.
- Screw on the knurled nut (3). Ensure a right angle between holding clamp and panel.



7 Putting into Operation

Connect supply-voltage Us.
Connect signal to measuring input. **Connect one input only!**

7.1 Setting of Parameters:

Decimal point behind last digit:

off	= display mode (measured values)
on	= menu mode, select the menu items
blinking	= parameter setting mode

7.1.1 Display Mode

Display of actual measured value.

Function buttons Up/Down

Push short	Change to menu mode, selection of menu item
Push for > 2 s	Display of stored MIN- or MAX- values

Function of button Set /Reset

Push short	no function
Push for > 2 s	Reset of MIN- or MAX-value (with Min- or Max-button pushed simultaneously)
Push for > 10 s	Display of software-version

7.1.2 Menu Mode (Decimal point behind last digit ON)

Selection of the menu items for changing the parameters.

Function buttons Up/Down

Push short	Selection of menu item; Change into display mode

Function Taste Set/Reset

Push short	Change into parameter setting mode

7.1.3 Parameter setting mode (Decimal point behind the last digit FLASHES)

Function buttons Up/Down

Push short/long	Adjustment of parameter value (slow/fast)

Function button Set/Reset

Push short	Storage of setting and choice of next parameter. Change into menu mode after the last parameter

7.1.4 Parametrizing of Input / Measuring Range

Select menu item with Up/Down until display InPU and measuring range alternate.
Change into parametrizing mode with Set and select measuring range with Up/Down.
Confirm and change to next menu with Set.
When changing measuring range parameters for scaling the display are set to:
InLo = 0%, InHi = 100 % of measuring range, diLi = 0, diHi = 5000 und dP = 0000.

7.1.5 Scaling the Display

Select menu item with Up/Down until display ScAL and mode (AUto or USEr) alternate.
Change into parametrizing mode with Set and select mode with Up/Down.
AUto: Display = measured signal without scaling.
USEr: Range of input-signal and range of display can be set by the user. The range of the input-signal must be within the measuring range.

7.1.6 Delay of Display (recommended at unstable signals)

Select menu item with Up/Down until display ddi S and programmed value alternate.
Change into parametrizing mode with Set and set delay of display with Up/Down.
Now the measured value will be written into the display every 0,1 ... 2 s.
Confirm and change to next menu with Set.

7.1.7 Fixed Digits (recommended when measured signal is very unstable or changing rapidly)

Select menu item with Up/Down until F and the fixed digits blinking are displayed. When no fixed digit is programmed, the last 2 digits are dark.
Set the fixed digits:

Fi	no
Fi 0	last digit fixed (0)
Fi 00	last digit fixed (00)

These digits display 0, independent from measured value.
Confirm and change to next menu with Set.

7.1.8 Code-lock

Select menu item with Up/Down until display CodE programmed state alternate.
Here the parameters can be protected by activating the code-lock. After pushing Set, Pin is displayed. Change to Pin 504 with buttons Up/Down (factory setting). After pushing Set the code-lock can be activated or de-activated. After pushing Set again, an individual Pin
Can be selected (write down)
With activated code-lock, all parameters can be seen but not changed any more.
In case of problems with the code-lock (forgotten Pin), the lock can be switched off and the Pin can be set back to 504,by pushing the button Set/Reset while connecting the device to supply voltage until CodE / oFF is displayed.

7.1.9 Line-Resistance at version for Pt100-sensors (RTD):

Select menu item with Up/Down until display L-A and programmed parameter alternate.
Change into parametrizing mode with Set and do the line-compensation with Up/Down (enter value of line-resistance) or 3-wire (3-L).

2-wire-configuration, compensation of cable-resistance:

Short-circuit the wires nearby the sensor and measure the resistance of the cable. Set „LA“ to this value.

7.1.10 Measuring Unit (°C or °F) at version for Pt100-sensors (RTD):

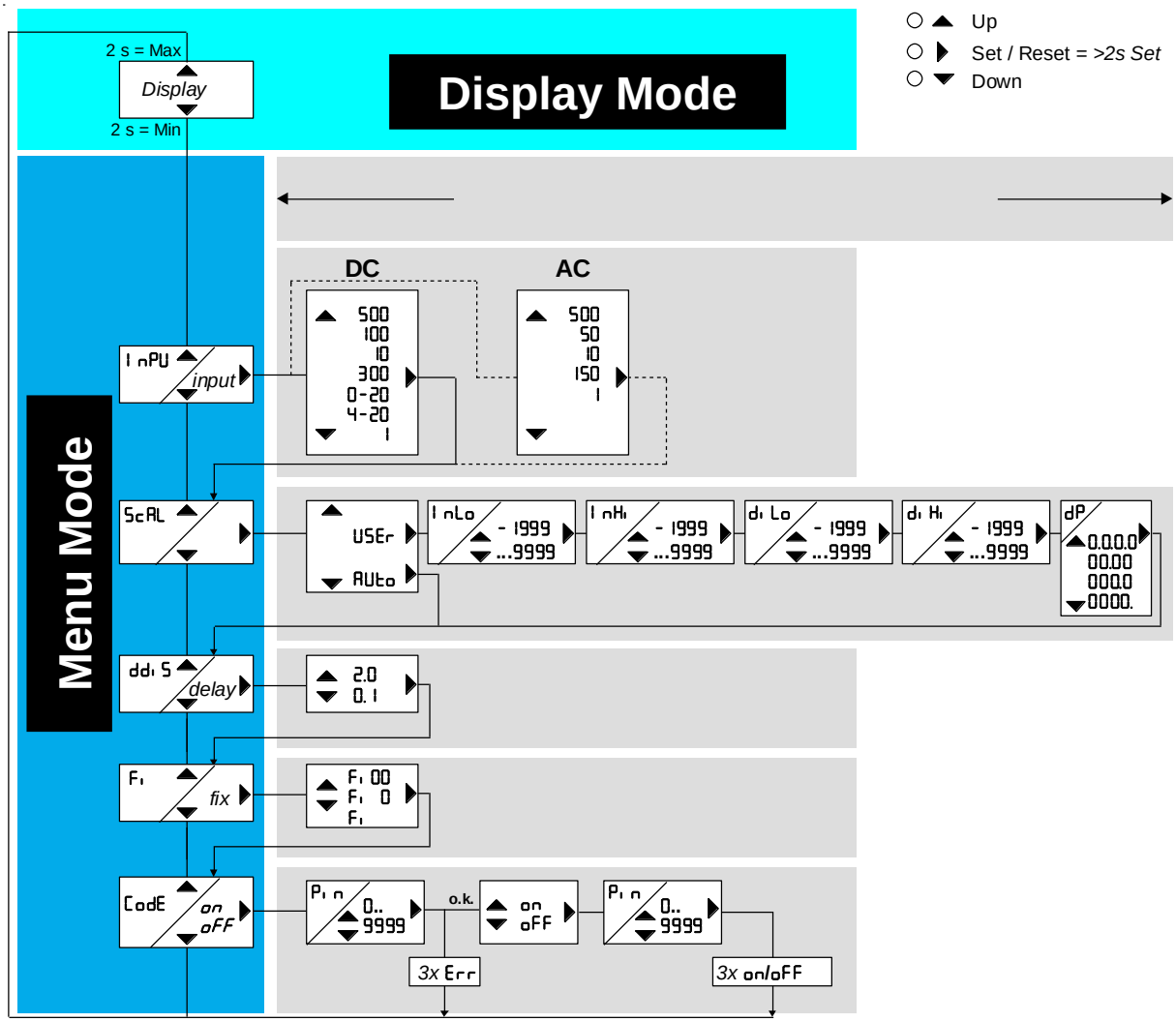
Select menu item with Up/Down until display Unit and programmed unit alternate.
Change into parametrizing mode with Set and select unit (°C or °F).

Tips:

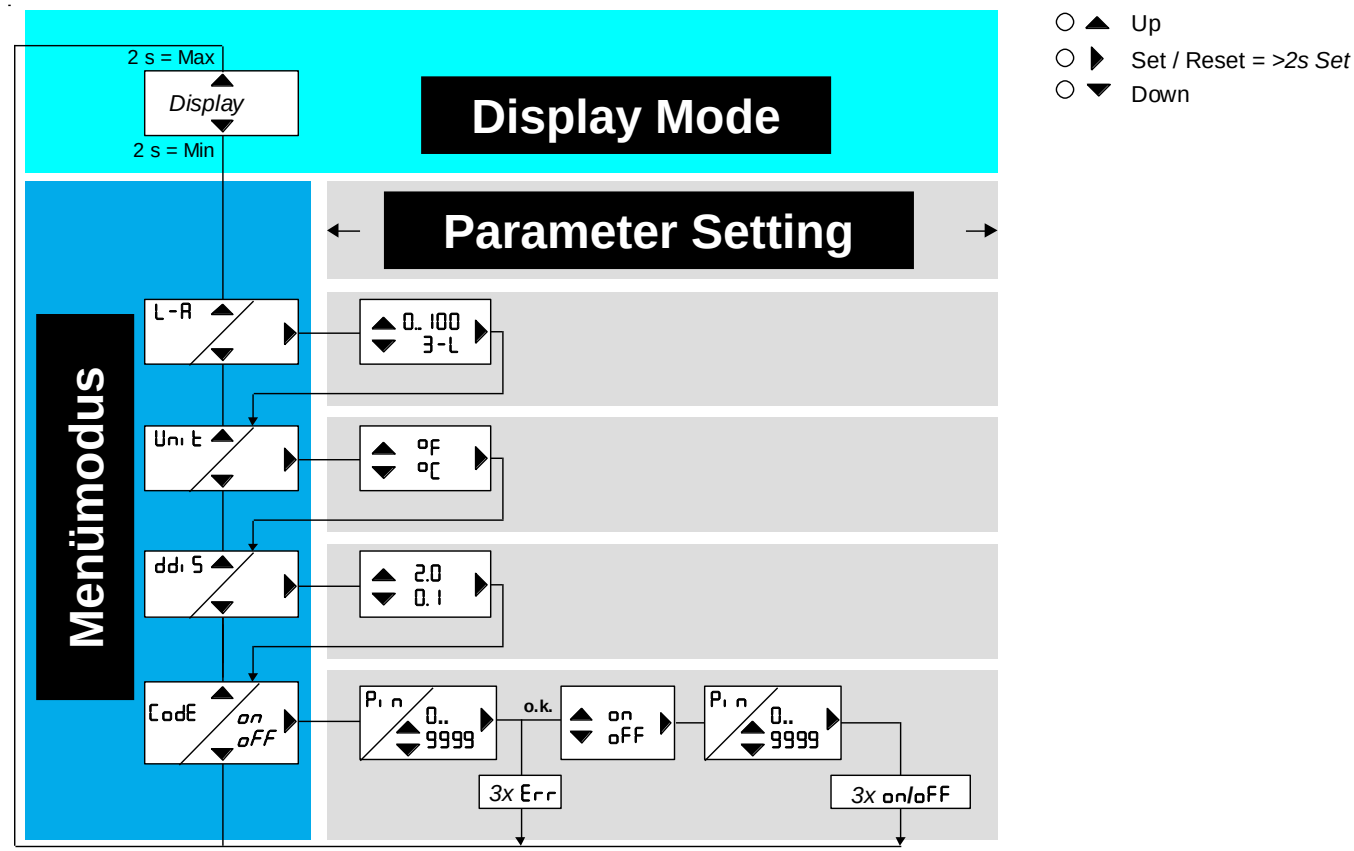
- After finishing one menu item it is switched automatically to the next one.
- When the right decimal point in the 7 segment display is on, the display mode has been left, and the menu items can be chosen with up/down (menu mode).
- When the right decimal point blinks, you are in the parameter setting mode and can change the setting with up/down.
- Long pushing on up/down speeds up the changes in the display.
- Pushing button up and down at the same time sets values to zero.
- With reset (press set/reset for 2 s) the display mode can be reached from every position of the parameter setting mode (the last selected value in is being stored).
- With InLo and InHi scaling is simplified when measuring-range and range of signal are different.
  Example: Display 0-500.0 at input-signal 10-90 V:
  - Connect to measuring input 100 V and select InPU = 100
  - Set InLo to 10.0
  - Set InHi to 90.0
  - Set diLo to 0
  - Set diHi to 5000
  - Set dP to 000.0

8 Operation

8.1 DC- and AC-Meters



8.2 Pt100- Meter



9 Trouble shooting

- Unit cannot be programmed – Code lock
  The code lock gives protection against unauthorized manipulation of the unit. When code lock is activated the parameters can not be changed. The pin can be set by the user.
  Pin unknown? Make code-reset: When switching in supply-voltage keep pushed button „Set“ for **2 s**.
  Display indicates: "8888"; "CodE"; "oFF"; "8888" release button „Set“.
  Code = oFF, Pin = 504.
- Indicated temperature does not correspond to the sensor temperature
  1. Is the correct measuring unit selected (°C or °F)?
  2. Check programmed sensor-connection (2- or 3-wire, line-resistance).
- Displayed value wrong or no signal
  Check if the correct input is selected and if the signal is connected to the correct terminals.
  Check if terminals have been plugged correctly.
- Display „ErLo“
  input current <3,8 mA at measuring range 4-20 mA. Check lines for break.
- Display „Er8“ „Er9“
  Er8 and Er9 are internal errors (hardware / parameters). Switch off and on supply-voltage and reset parameters to factory-setting.
  If the error still exists send it back to factory for repair.
- Display „-EEE“
  signal lower than measuring range / display range.
- Display „EEEE“
  signal higher than measuring range / display range.
- Display of software-version: push Set for >10 s in display mode.

Indication of the digital display:

InPU	= measuring input / measuring range
500	= 500 V
100	= 100 V
50	= 50 V
10	= 10 V
300	= 300 mV
150	= 150 mV
0-20	= 0-20 mA
4-20	= 4-20 mA
1	= 1 A
ScAL	= scaling of measuring range and display
AUto	= Zero, FullScale and decimal-point are taken over from selected measuring range
USEr	= scaling of measuring input and measuring range by the user
InLo	= measuring range - Zero
InHi	= measuring range - FullScale
diLo	= displayed value at measured signal = InLo
diHi	= displayed value at measured signal = InHi
dP	= decimal point
ddiS	= delay of display
Fi	= fixed digits
CodE	= code
Pin	= factory-setting of Pin = 504
on, oFF	= an / off
L-A	= line compensation
3-L	= 3-wire
Unit	= measuring unit for temperature Pt100 (°C, °F)
----	= Min
	= Max

ErLo	= input current <3,8 mA at measuring range 4-20 mA
Er8, Er9	= error in device
-EEE	= signal lower than measuring range / display range
EEEE	= signal higher than measuring range / display range

10 Technical data

Power Supply

Rated supply voltage Us	AC/DC 24-240 V
Tolerance DC	DC 20 - 297 V (0,85 x 24 V...1,35 x 220 V)
Tolerance AC	AC 20 - 264 V (0,85 x 24 V...1,1 x 240 V)
Power consumption	< 3 VA
Frequency	48...62 Hz

Measuring Inputs

insulated from supply-voltage
(connect 1 input only)

DC-Meter	± **300 mV** / 120 kΩ / max. ±2,5 V
Measuring range / resistance of input	± **10.00 V** / 1 MΩ / max. ±50 V
/ overload capacity	**± 500.0 V** / 3 MΩ / max. ±600 V
	± 100.0 V / 3 MΩ / max. ±600 V
	± 20.00 mA / Shunt 15 Ω/ max. ±100 mA
	± **1.00 A** / Shunt 150 mΩ / max. ±2 A
AC-Meter	**150 mV** / 900 Ω / max. 2,5 V
Measuring range / resistance of input	**10.00 V** / 100 kΩ / max. 50 V
/ overload capacity	**50.0 V** / 1 MΩ / max. 60 V
	500.0 V / 3 MΩ / max. 600 V
	1.00 A / Shunt 150 mΩ / max. 2 A
Measuring time AC/DC	< 400 ms + delay of display dd5
Pt100- Meter	**- 199,9 ... + 850,0 °C** (= -328 ... +1563 °F)
Sensor-connection	Pt100, 2- or 3-wire
Wire-resistance 3-wire	max. 3 x 50 Ω
Measuring time temperature	< 400 ms + delay of display dd5

Housing

	Panel-mount housing
Dimensions (h x w x d) mm	36 x 72 x 79 mm
Terminals	
Wire connection one wire	1 x 0,5…1,5 mm^2
Stranded with insulated ferrules	1 x 0,14…1 mm^2
Attachment Mounting	Panel-mount, panel cut-out $33^{+0,6}$ x $68^{+0,7}$ mm
	max. thickness of panel 8 mm
Protection housing	IP 30
Protection terminals	IP 20
Weight	approx. 120 g

Subject to technical changes