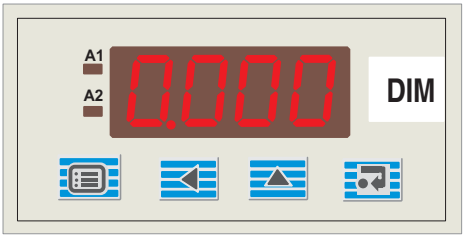
DS 96/48 P Digital indicator

Short manual 41/33-89 EN Rev. 00



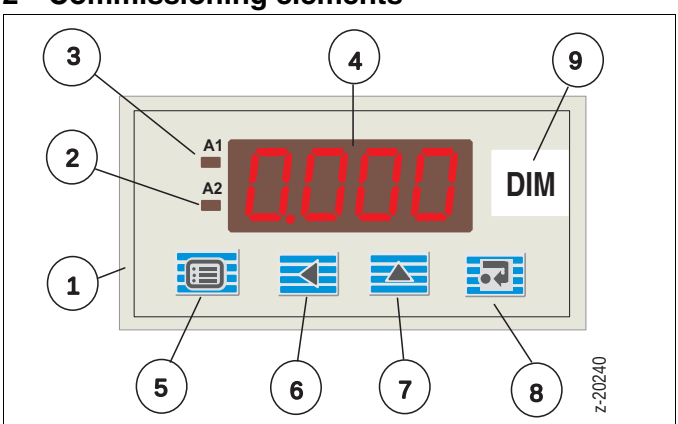
1 Safety instructions

Correct and safe operation of the apparatus calls for expert installation and meticulous maintenance. This apparatus has beeen designed and tested in accordance with IEC 1010-1 1990 and has been supplied in a safe condition. In order to retain this condition and to ensure safe operation, the safety instructions in this operating manual bearing the headline “Caution" must be observed. Otherwise, persons can be endangered and the apparatus itself as well as other equipment and facilities can be damaged.

Caution

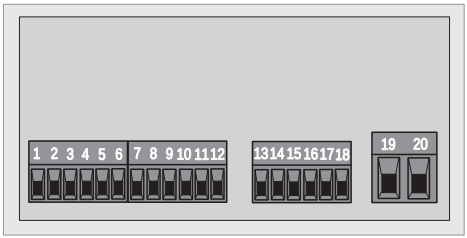
In order to protect against shocks, this apparatus may only be operated when fully and properly installed.

2 Commissioning elements



1	Front bezel (removeable)	4	4 digit, 7 segment display
2	optical alarm A2	5...8	keys
3	optical alarm A1	9	insert dimension plate

Back of housing



Terminals (wire cross section max 1.5 mm^2)

2.1 Connections

Connect the instrument according to the rating plate.

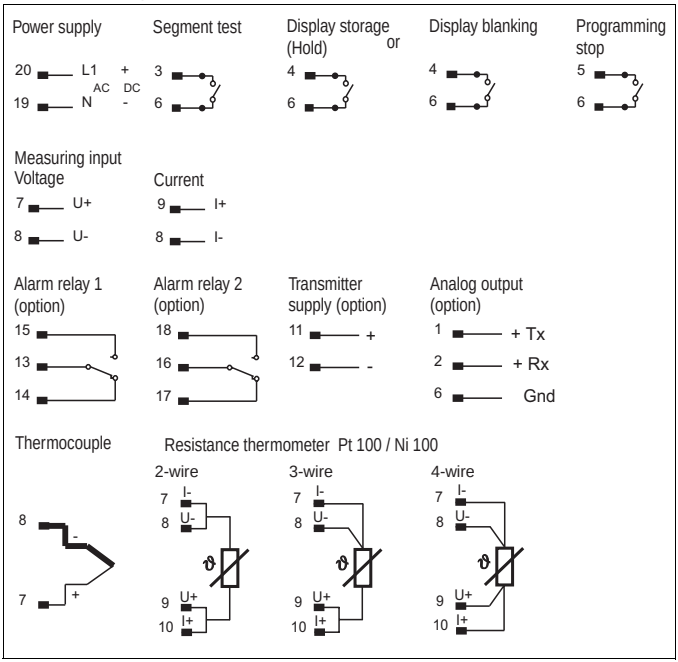
Caution:

Before switching on, please ensure that the operating voltage stated on the rating plate is identical with the mains voltage.

Terminal assignment

1	Tx (serial interface)	11	Transmitter supply (+)
2	Rx (serial interface)	12	Transmitter supply (-)
3	Segment test	13	A1 common
4	Hold/retrace blanking	14	NC contact
5	Programming disable	15	NO contact
6	Digital GND (terminals1-5)	16	A2 common
7	Input U (+)	17	NC contact
8	Input (-)	18	NO contact
9	Input I (+)	19	N, DC (-)
10	free	20	L1, DC (+)

Connection diagram



Relay contact positions are shown for de-energized state.

2.2 Control inputs

Control inputs are activated by connecting those terminals to terminal 6.

Segment test terminal 3: Indication “8.8.8.8." and A1, A2

Programming disable terminal 5: Disables programming via front keys.

Hold or Blanking terminal 4 (Option):

Hold: Freezes the display and stops all functions.

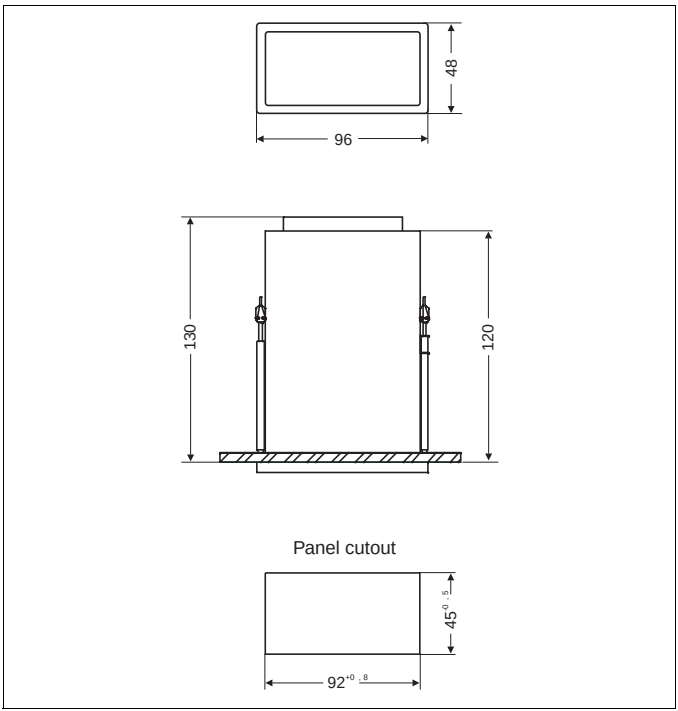
Blanking: shuts off all digits.

3 Mounting

1. Fit the unit into the panel from the front.
2. Tighten mounting brackets equally.

Note
The mounting brackets are designed for close packed mounting.

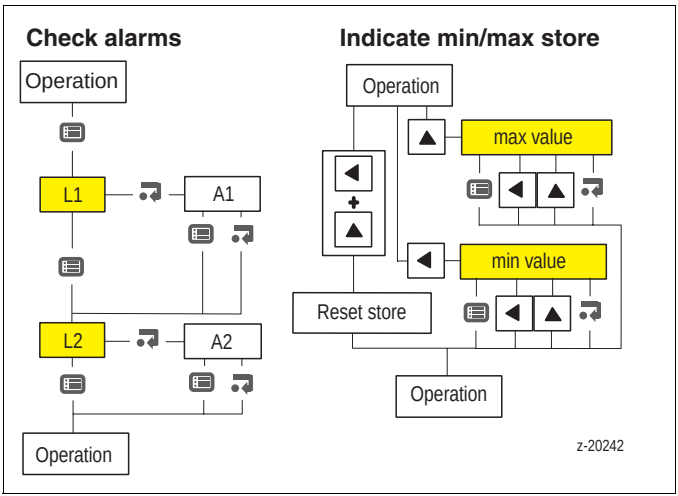
Dimension drawing (dimensions in mm)



4 Indication of stored (min/max) and alarm values

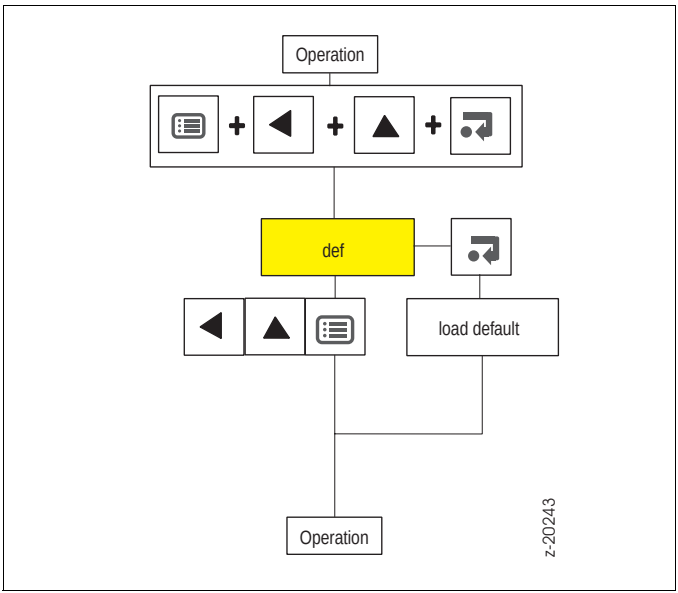
(A1, A2)

If for 2 minutes no key is activated while programming, checking alarms or indicate stored values the instrument always automatically falls back to normal operation modus.

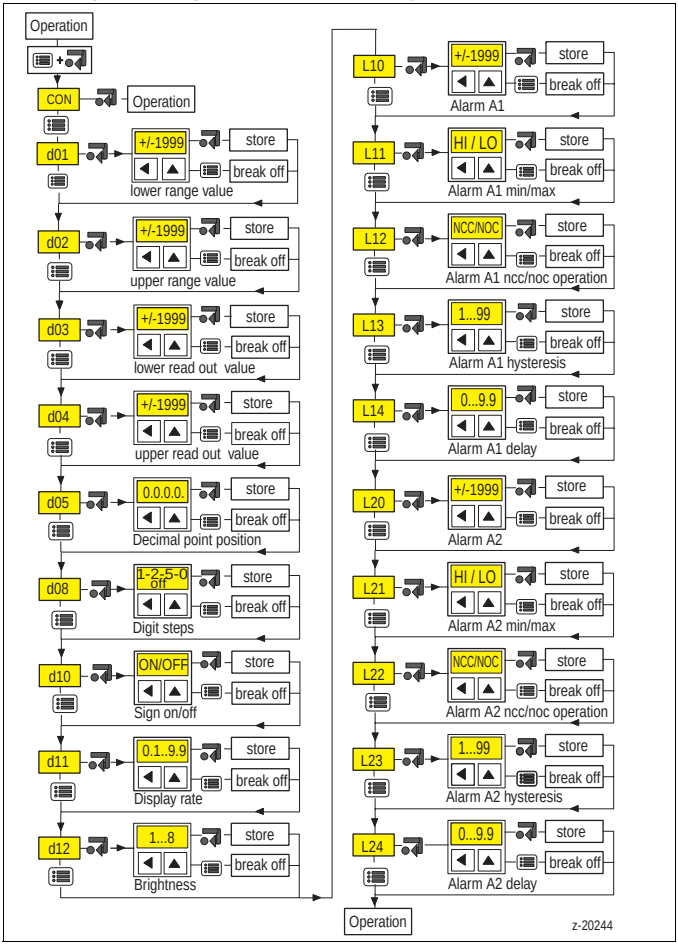


5 Programming

One can always restore the factory values (default values) by pressing all keys simultaneously.



5.1 Programming menu via front keys



5.2 Programming Example

The following example shows how menu items d01...d05 can be set:
A transmitter outputs a current signal between -3 mA and +17.5 mA (within standard range -20 mA to 20 mA, s.b.).
A -3 mA current shall correspond to a display value of -50.0. The upper current value of 17.5 mA shall give a display value of +173.0.

The device is designed such that it displays the maximum value, i.e. 1999, with the upper range value. The user can change this basic setting using the scale.

Proceed as described below to configure the desired lower and upper range values (-3 mA and +17.5 mA):
Add as many zeros to the end value that the display is filled completely. Example: -3 mA →300 and 17,5 mA →1750).

In the overview below, the values that must be entered for some specific measuring ranges are shown.

Measuring range: Value to be entered:
-200 mV...+200 mVMeasured variable in mV x 10
-2 V... .+2 VMeasured variable in mV x 1
-20 V....+20 VMeasured variable in mV x 0.1
-2 mA...+2 mAMeasured variable in mA x 1000
-20 mA... +20 mA Measured variable in mA x 10 (example)
-200 mA...+200 mAMeasured variable in mA x 100

Also, the display range is defined as required to realize the wanted display. Set the point to the position where it is needed. The point position has no effect on other parameters, it is only a matter of display.

Menu item d01, lower range value:
Example above: Set to -300. (Only available for current/voltage model)

Menu item d02, upper range value:
Example above: Set to 1750. (Only available for current/voltage model)

Menu item d03, start of display range:
Example above: Set to -500. (Only available for current/voltage model)

Menu item d04, end of display range:
Example above: Set to 1730. (Only available for current/voltage model)

Menu item d05, position of decimal point:
Use the  and  buttons to move the decimal point to the appropriate position of the display. In the example above, position "000.0" is used.

6 Technical data

Indication	
Display	LED red, 13 mm high
Maximum reading	- 1999....+1999 digit
Readout overflow	„OFL"
Range overflow	„Err"
Decimal point	on/off, position
Measuring cycle	0.1 s ... 9,9 s
Deviation	0.1% of value ± 1 digit at 23 °C
Temperature coefficient	0.05 % of value/10 °C, ±1 digit
Parasitic voltage	CMR > 100 dB (0/50 Hz)
Display control	
last digit	2- steps, 5- steps, fixed 0, last digit off
complete readout	opional Hold or Blanking display, Segment test
Input	
Current, Voltage	± 2 mA....200 mA DC, ± 0.2 V...50 V DC
Input resistance	100 Ω at 20 mA, > 150 kΩ at 2 V
Power supply	
DC voltage	18...32 V DC approx. 1,8 W
AC voltage	24/115/230 V AC, 50...60 Hz, approx. 3 VA
Environmental capability	
Operating temperature	0...+ 50 °C
Storage temperature	- 25...+ 65 °C
Relative humididity	≤75 % annual average, avoid condensation
Housing	
Dimensions (W x H x D)	96 x 48 x 120 mm (130 mm incl. terminals)
Panel cut out	92 (+0.8) x 45 (-0.5) mm
Material	plastic: ABS
Type of protection	case IP 52, terminals IP 20

Weight	approx. 0.4 kg
Connection	plug in screw terminals for 1,5 mm^2
Standards	
EMC, safety data	EN 55011-B, EN 61010-1, EN 50082-1
Options	
Transmitter supply	24 V DC, max. 25 mA unregulated
2 alarm relay	Relay output 4 A, 250 V Min. or Max., NO or NC operation Hysteresis, and response time programmable
Indication	LED-Indication 2x (A1, A2)
Interface	RS 232 in preparation (Configuration, viewing of values and parameters) DS 96/48 P: optionally DS 96/48 PK standard

Subject to technical changes.

ABB Automation Products GmbH
Hoeseler Platz 2, D-42579 Heiligenhaus
Phone +49(0)20 56 12 - 51 81
Fax. +49(0)20 56 12 - 50 81
http://www.abb.com

Subject to technical changes
Printed in the Fed. Rep. of Germany
41/33-89 EN Rev. 0.0
Edition 04.01