

Standard Signal Meter S 1010

Industry standard signals - integrated transmitter-supply

Features

- LED-Display 14.2 mm red
- Indicating range $\pm 9999(0)$ Digit
- Indicating range and decimal point free programmable
- Max. 2 alarm outputs, relay SPDT
- Analog output 0/4 ... 20 mA, 0/2 ... 10 V DC
- Field case with snap lid, 2 x M16x1.5
other cable glands see option 09 or on request
- Protection IP65



General

The Standard-Signal-Meter S1010 has been designed for measuring industry standard signals 0/4 ... 20 mA or 0 ... 10 V DC. The device offers an integrated transmitter supply for direct connection of 2- and 3-wire transmitters for e.g. pressure or temperature. Indicating range and decimal point are free programmable in the range $\pm 9999(0)$ git.

Short information

Programming	Parameters are programmed via front-side membrane keypad.
Alarm outputs	Switching performance min. or max., hysteresis, on-delay time and off-delay time are programmable in range from 1 s up to 9 h.
Digital filter	With activated digital filter last 16 measured values will be averaged continuously and the result shown in the display.
Analog output	Proportional to the input signal an analog output signal 0 ... 20 mA/0 ... 10 V DC or 4 ... 20 mA/2 ... 10 V DC can be generated. Output changed automatically from current signal to voltage signal depending on burden.

Technical data

Power supply

Supply voltage : 230V AC $\pm 10\%$; 115V AC $\pm 10\%$, 24V AC $\pm 10\%$ or 24 V DC $\pm 15\%$

Power consumption : max. 3.5 VA

Operating temperature : -20 ... +55 °C Standard (extended temperature range on request)

Rated voltage : 250 V~ acc. VDE 0110 between input/output/supply voltage over-voltage categoric III

Test voltage : 4 kV=, between input/output/supply voltage

Conformity : CE

Input

Current input : 0/4 ... 20 mA

$$R_i = 10 \, \Omega$$

Voltage input : 0 ... 10V

$$R_i = >100 \text{ k}\Omega$$

Accuracy : $< 0.1 \% \pm 2$ Digit

Temperature coefficient : 0.004 %/K

Transmitter-supply : U_0 appr. 24 V, R_i appr. 150 Ω , max. 50 mA (25 mA with relay and analog output)

Display

: LED red, 14.2 mm

Display range : $\pm 9999(0)$ with leading zero suppression

Parameter display : LED 2-digit red, 7 mm (parameter - and output indicator)

Output

: SPDT, < 250 V AC < 250 VA < 2 A, < 300 V DC < 50 W < 2 A

Analog output : 0/4 ... 20 mA burden $\leq 500 \Omega$; 0/2 ... 10 V burden $> 500 \Omega$, not isolated to the input; automatic output changing (burden dependent)

Accuracy : 0.1 %; TK 0.01 %/K

Field case

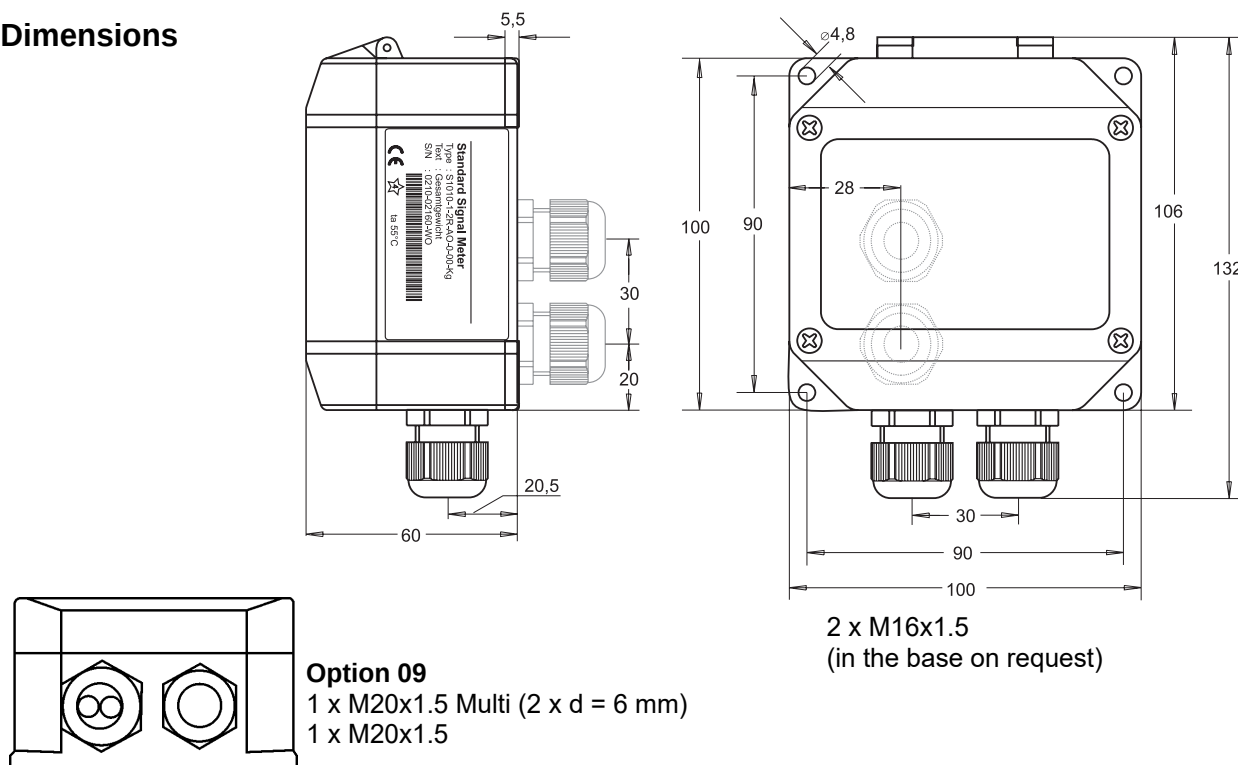
: Case polyamide, with fibre-glass PA6-GF 15/15, Keypad polyester

Weight : max. 450 g

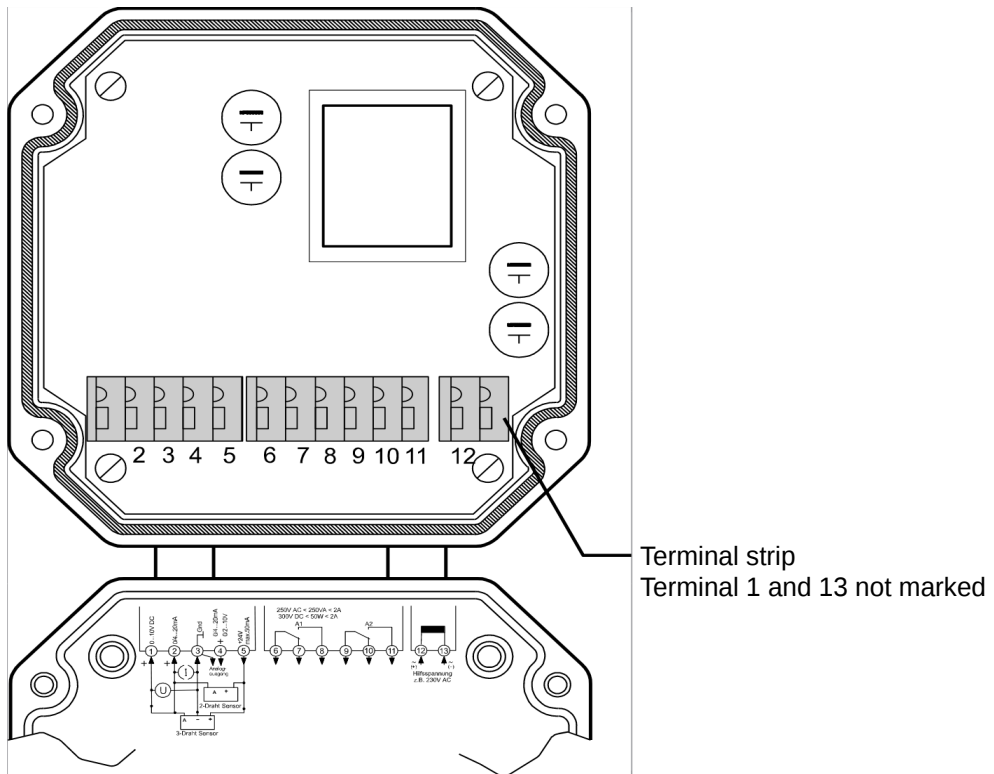
Electrical connection : Clamp terminals, 2 mm² single wire, 1.5 mm² flexible wire, AWG14

Protection : IP65, terminals IP20, fingersafe acc. German BGV A3

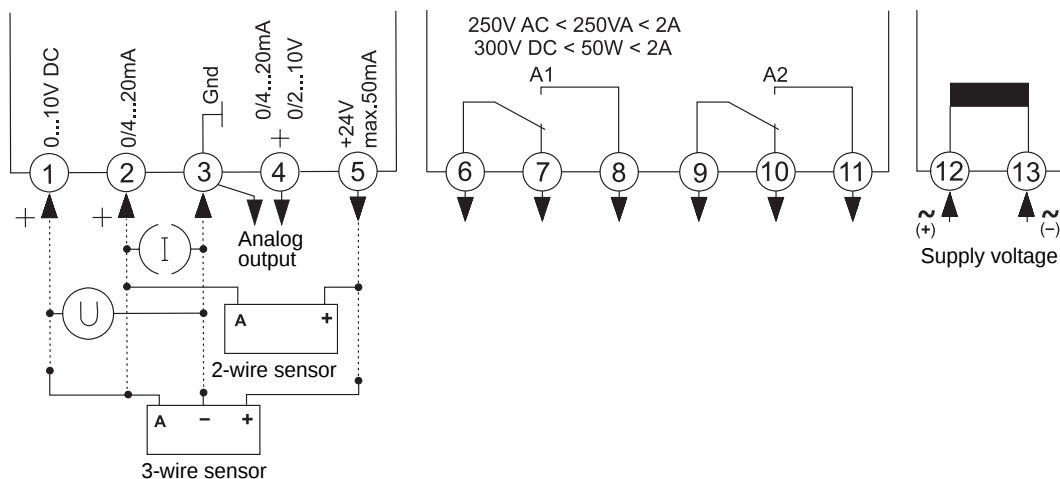
Dimensions



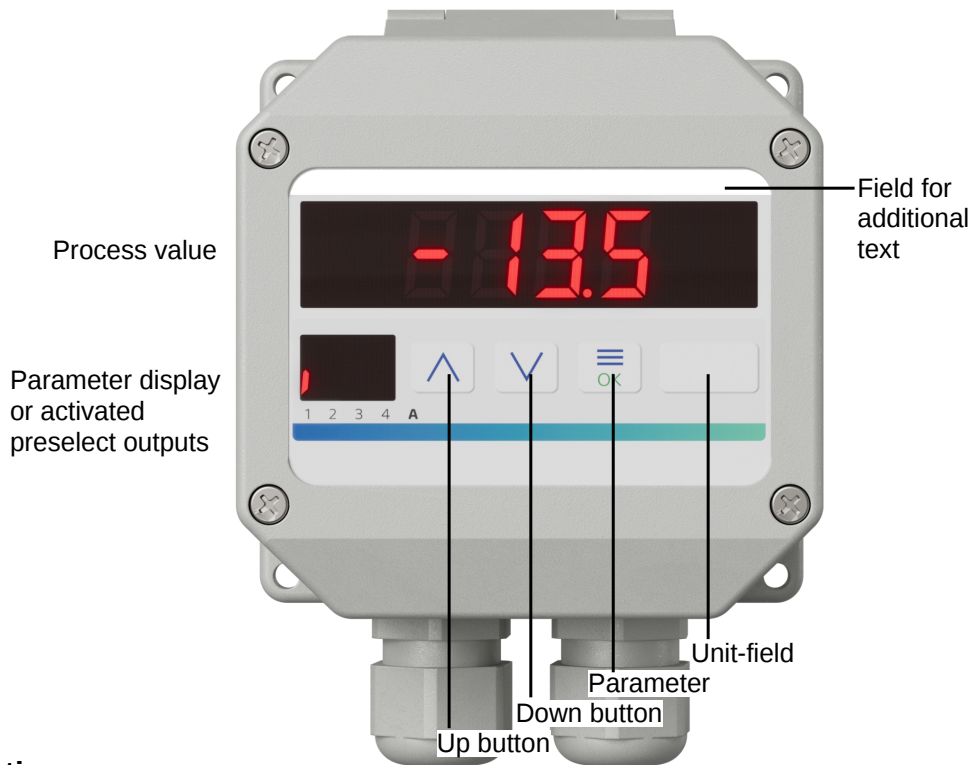
Legend (open lid)



Connection diagram



Controls and indicators



Description

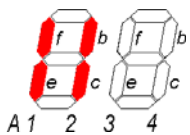
Operating of the device is arranged in 2 levels. The requested parameter can be called by button . For selections within a parameter or for entering data, use buttons  and .

After power-on the device is located in the **Working level**. Set points of the alarm outputs can be programmed if they are available.

Pressing the button  for more than 2 seconds, activates the **Configuration level**. Now all the parameters which defines the function of the device can be programmed. E.g. the switching performance of the alarm outputs, measuring input and the analog output.

After finishing the configuration or when no button was pushed for more than 2 minutes, the program returns to the Working level. Leaving the Configuration level is possible at any time by pressing the button  for more than 2 seconds.

Parameter display as status indicator for the alarm outputs A1-A2.



Segments f (A1) and/or b (A2) are flashing with 2 Hz, when delay time is active.

Segments e (A1) or c (A2) are output indicators.

Error codes:

Display flashes If the input signal is more than 3 % outside of the programmed measurement range the A/D- converter is over driven and the display flashes with appr. 1 Hz.

Error ! EEPROM test. Reading this message, a program error has been occurred. When pushing the button  a copy of the EEPROM will be reloaded and the device will work with the factory settings. If this copy does not work, please ship the device to factory for repair service.

Loc Program lockout. See configuration page 7.

Start-up note: The device has to be configured, before it can be used

⇒ see page 6

Notes to representation



Parameter is only displayed when configured



Parameter is only displayed when feature is included (see order code)

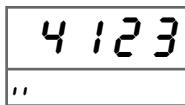
Please Note: All parameters can be called if they are not blocked by other programmed parameters and if they are available. **Factory settings** are shown in the display.

Working level

Button

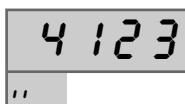
Display

Description

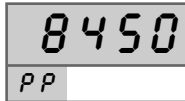


Actual value.

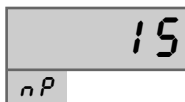
Alarm output indication
(only if installed and activated).



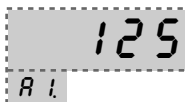
Display brightness (permanent changing possible)
Setting possible in 9 steps with buttons ▲ and ▼ .



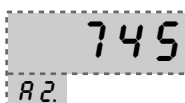
Display maximum reading.
Reset with buttons ▲ or ▼ , or at every power off.



Display minimum reading.
Reset with buttons ▲ or ▼ , or at every power off.



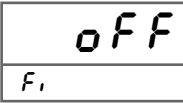
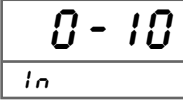
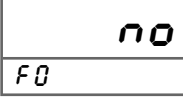
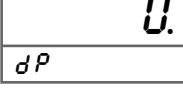
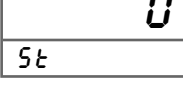
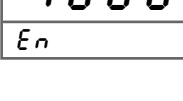
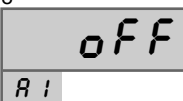
Setpoint output A1.
Setting possible from 5 k ... E n with buttons ▲ and ▼ .
5 k (start value) ... E n (end value)



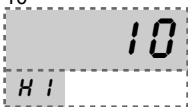
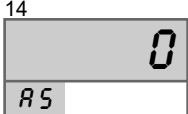
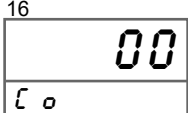
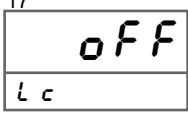
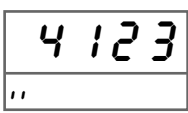
Setpoint output A2.
Setting possible from 5 k ... E n with buttons ▲ and ▼ .
5 k (start value) ... E n (end value)



Configuration

Button	Display	Description (Display graphic shows factory settings)
 Press 2 s	1 	Digitalfilter <i>o F F</i> , <i>o n</i> Averaging of the last 16 measured values continuously. Selection with buttons  and  .
 	2 	Indicating correction. Setting possible from - 99 ... 99 digit with buttons  and  .
 	3 	Selection of the input signal. <i>0 - 10</i> ; <i>0 - 20</i> ; <i>4 - 20</i> Selection with buttons  and  .
 	4 	Fixed Zero 0, z.B 3690 + 0 <i>n o</i> ; <i>y e s</i> Selection with buttons  and  .
 	5 	Decimal point position <i>F 0 = n o</i> <i>0.</i> <i>. 0</i> <i>. 00</i> <i>. 000</i> <i>F 0 = y e s</i> <i>0.</i> <i>. 00</i> <i>. 000</i> <i>. 0000</i> Selection with buttons  and  .
 	6 	Start value for indicating range and analog output. Setting possible from - 9999 ... 9999 digit with buttons  and  . In case of modification new configuration of the alarm outputs is necessary.
 	7 	End value for indicating range and analog output. Setting possible from - 9999 ... 9999 digit with buttons  and  . In case of modification new configuration of the alarm outputs is necessary. If $5 \text{ t} > \text{E n}$, output works with a decreasing characteristic.
 	8 	Switching performance output A1. Function <i>o F F</i> ; <i>o n c</i> (min); or <i>o n j</i> (max). If activated the start value will be loaded for set point Selection with buttons  and  .
 	9 	Set point output A1. Setting possible from 5 t (start value) ... E n (end value) with buttons  and  .

continue
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Button	Display	Description (Display graphic shows factory settings)
	10 	Hysteresis A1 Setting possible from 1 ... 9999 digit with buttons  and  .
		
	11 	Switch-on delay time output A1. Setting possible from 0.00.00 ... 9.00.00 (h.mm.ss) with buttons  and  .
		
	12 	Switch-off delay time output A1. Setting possible from 0.00.00 ... 9.00.00 (h.mm.ss) with buttons  and  .
		Note: Switching performance and set points for alarm output A2 has to be configured in the same way.
	13 	Analog output. 0 - 20 mA (0 - 10 V DC) or 4 - 20 mA (2 - 10 V DC). Changing from current to voltage output is load-dependent ($\leq 500 \Omega$ = current output, $> 500 \Omega$ = voltage output). Selection with buttons  and  .
		
	14 	Analog output start value (Option 08) Setting possible from 5 to ... End of the display range with buttons  and  .
		
	15 	Analog output end value (Option 08) Setting possible from 5 to ... End of the display range with buttons  and  .
		Note: If the display range would be changed afterwards, the range of the analog output get the same values. Start- and end value of the analog output can be set anywhere in the display range. If $R E < R S$ the output works with a decreasing characteristic.
	16 	Code for factory settings.
		
	17 	Programming lock. off = no lock L o n F. = configuration level locked R L L = all parameters locked Selection with buttons  and  .
		
		Return to the working level

Ordering code

S1010 - 1. - 2. - 3. - 4. - 5. - 6. - 7.

1. Input

1 Input standard signals
0/4 ... 20 mA, 0 ... 10 V DC,
integrated transmitter-supply 24 V DC max. 50 mA

2. Alarm output

00 not installed
2R 2 alarm outputs relay SPDT

3. Analog output

00 not installed
AO Analog output 0/4 ... 20 mA or 0/2 ... 10 V DC
not isolated

4. Supply voltage

0	230 V AC	± 10 %	50-60 Hz
1	115 V AC	± 10 %	50-60 Hz
4	24 V AC	± 10 %	50-60 Hz
5	24 V DC	± 15 %	

5. Option

00	without option
01	min- and max- peak hold
07	display brightness programmable
08	analog output free programmable
09	1 x M20x1.5 Multi (2 x Ø6 mm), 1 x M20x1.5

6. Unit (appears in the unit field)

7. Additional text (will be placed in the field for additional text, max. 3 x 70 mm, HxW)

Custom configuration on request