

Setpoint adjuster SG 1010

Output standard signals 0/4 ... 20 mA or 0/2 ... 10 V DC

Features

- LED-Display 14.2 mm red
- Display range $\pm 9999(0)$ Digit
- Indicating range and decimalpoint programmable
- Setpoint adjustment with front buttons or extern. signals 0/24 V
- Setpoint high and low level 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



Fieldcase 100x100x60 mm
with 2 cable glands M16x1.5

General information

The Set point adjuster SG1010 has been designed for generating adjustable set point value signals 0/4... 20mA and 0/2... 10V DC. Any display value can be assigned to the respective output signal. The operator can work with real values. The adjustment speed is programmable.

Short information

Programming	Parameters are programmed via front-side membrane keypad.
Alarm outputs	Switching performance of the alarm output is programmable as minimum or maximum function.
Int. setpoint adjustment	The setpoint can be adjusted with front buttons. The adjustment is running dynamically, i.e. the regulating speed increases with operation time of the buttons.
ext. setpoint adjustment	The setpoint can be adjusted with external signals. The adjustment is running dynamically or linear. In the linear adjustment mode the speed is constant, i.e. the output signal changes linear. The adjustment time is programmable from 1 to 100s.
Power-on-reset	Setpoint can be set to the last stored value or to a programmed reset value.
Analog output	Proportional to the display value an isolated analog output signal 0 ... 20 mA/ 0 ... 10 V DC or 4 ... 20 mA/2 ... 10 V DC will be generated. The output signal is limited to the range of the minimum and maximum value. Output changed automatically from current signal to voltage signal depending on burden.

Technical data

Power supply

Supply voltage	: 230 V AC $\pm 10\%$; 115 V AC $\pm 10\%$; 24 V AC $\pm 10\%$ or 24 V DC $\pm 15\%$
Power consumption	: 5 VA
Operating temperature	: -20 ... +55 °C (-4 ... 131°F)
Rated voltage	: 250V _{rms} acc VDE 0110 between input/output/supply voltage, overvoltage categoric III
Test voltage	: 4 kV _{rms} , between input/output/supply voltage
CE - conformity	: EN55022, EN60555, IEC61000-4-3/4/5/11/13

Input

Control input	: 0/24 V DC Ri 6.3 k Ω <4 V low, > 8.5 V high, Hysteresis >2.5 V, max. 35 V DC
Switch contact supply	: 24 V DC (pnp), Ri appr. 150 Ω , max. 50 mA

Display

Indicating range	: $\pm 9999(0)$ digit
Add. display	: LED 2-digit red, 7 mm (parameter - und status indicator)

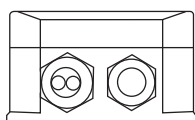
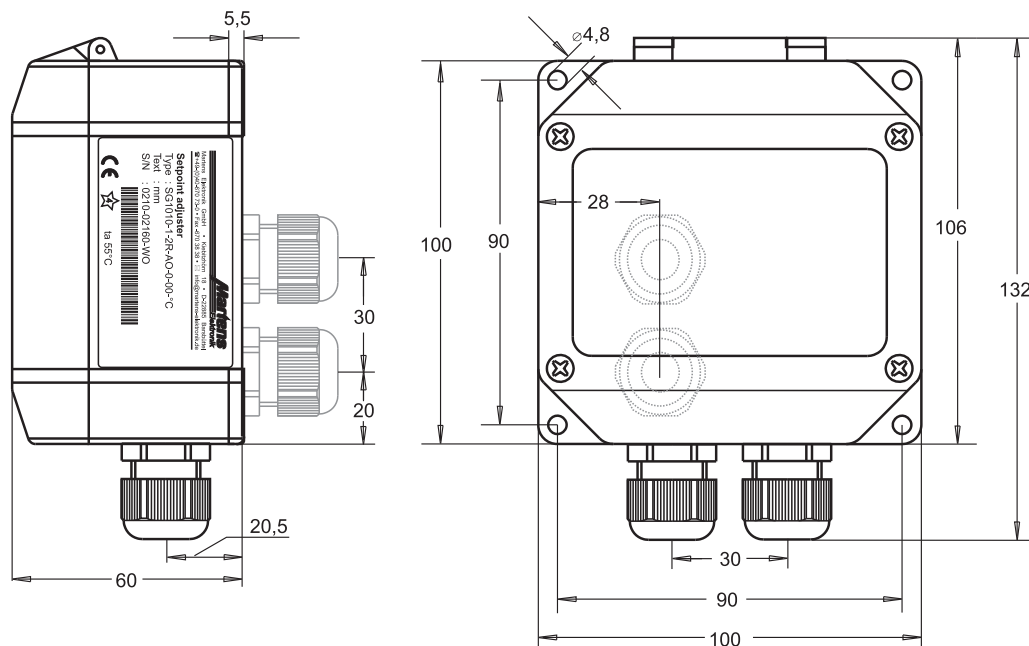
Output

Relay	: 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 Ω , isolated output changes burden dependant
-Accuracy	: 0.1 %; TK 0.01 %/K
-Resolution	: 12 Bit

Case

Material	: Case Polyamide with fibre-glass PA6-GF/GK 15/15 keypad polyester, UV-stable
Weight	: max. 450 g
Electrical connection	: Clamp terminals, 2 mm ² single wire, 1.5 mm ² flexible wire, AWG14
Protection	: IP65, terminals IP20, fingersafe acc. German BGV A3

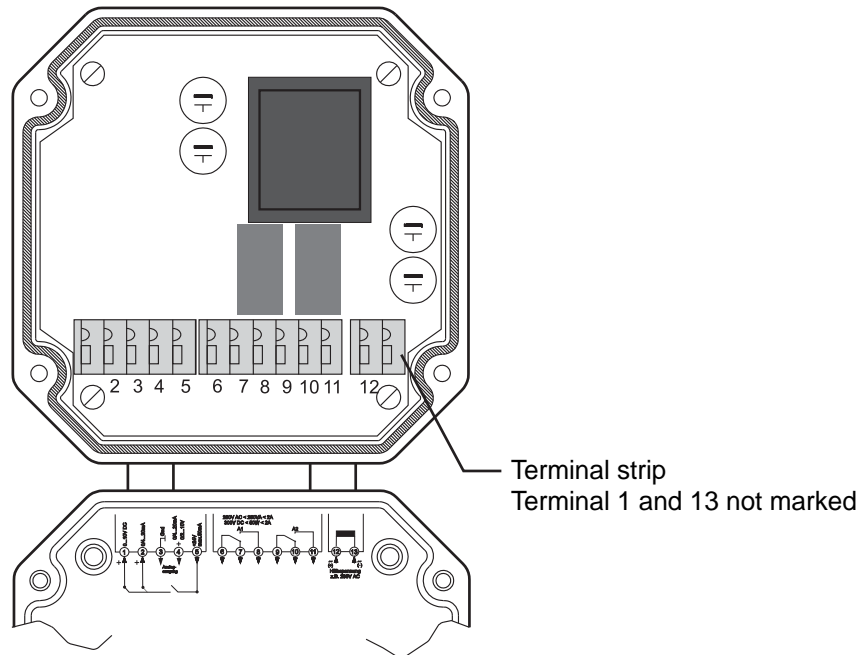
Dimensions



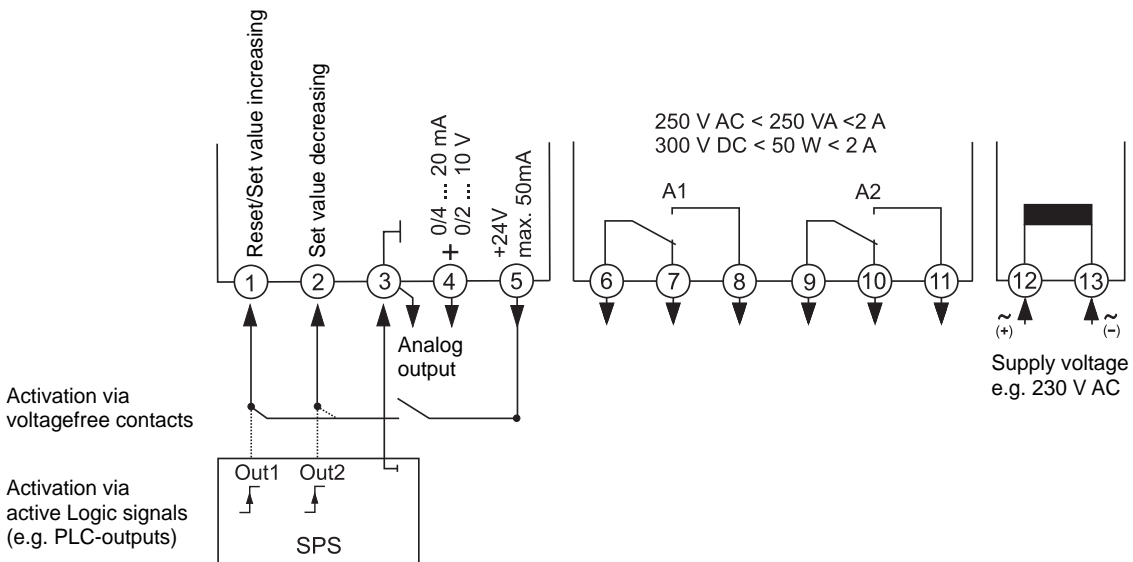
Option 09
1 x M20x1.5 Multi (2 x Ø=6 mm)
1 x M20x1.5

2 x M16x1.5
(In the base on request)

Legend (open lid)



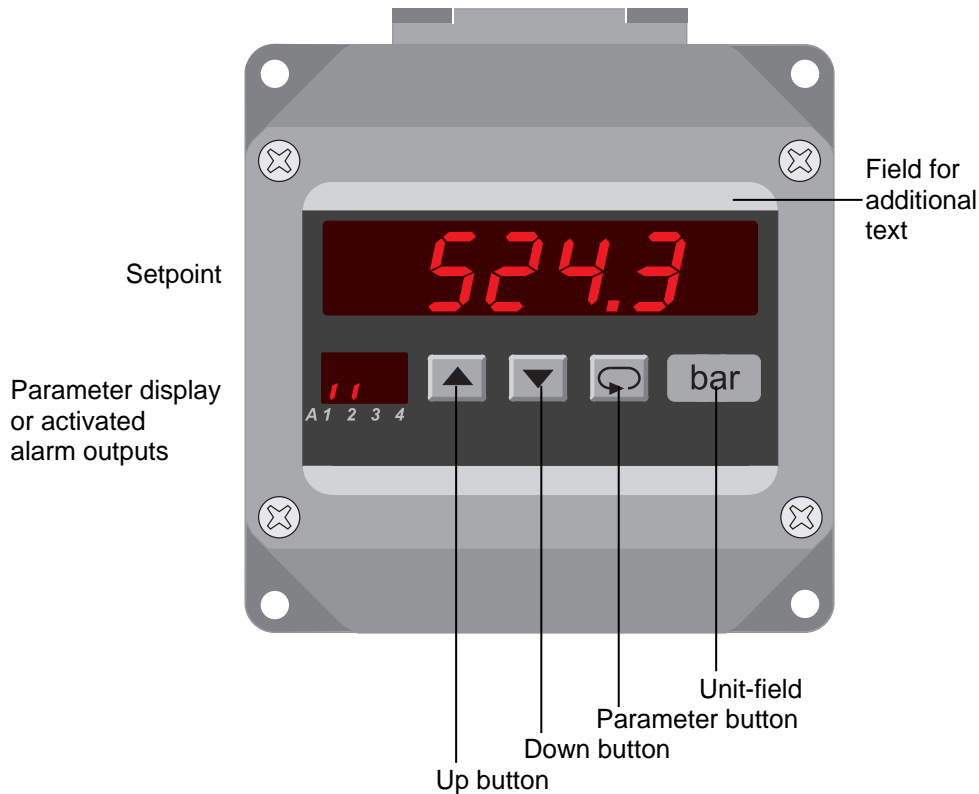
Connection diagram



Electrical connection of terminal 1 and 2 according to the device type

	SG1010-0-XX-XX-X-XX	SG1010-1-XX-XX-X-XX
Terminal 1	Reset	Set value increasing
Terminal 2	not used	Set value decreasing

Controls and indicators



Description

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

Button combinations:

- + 1 parameter back
- + setting parameter to zero or minimum value

After switching on the supply voltage, the device is located in the **Working level**. Setpoint can be adjusted.

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.

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.

Error codes:

- P E* Reading this message in the parameter display a parameter failure has been occurred. The display flashes. By pressing one of the buttons, the error code will be deleted and a copy of the factory settings will be reloaded to the EEPROM. The device will work with the factory settings. If this copy doesn't work, please ship the device for factory repair.
- Lo c* Programming lock active. See configuration page 7.
- o F* Overflow

Start-up note:

Before the device can be used, it must be configured for the intended use.

⇒ see page 5

Notes to representation



Parameter is only displayed when configured




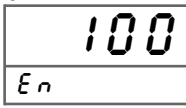



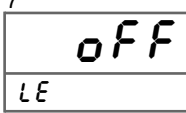



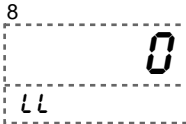











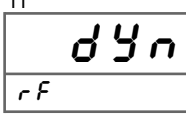



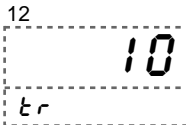







Parameter is only displayed when feature is included (see order code)

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.


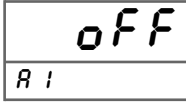




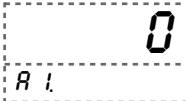




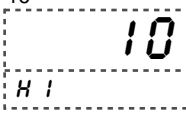




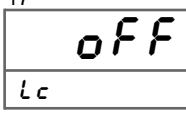



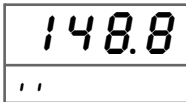
Configuration

Button	Display	Description
 Press 2 s		Actual setpoint value Setting with buttons ▲ and ▼. Output indication (only if installed and activated)
↓	1 	Configuration of the analog output 0 - 20 mA (0 - 10 V DC) 4 - 20 mA (2 - 10 V DC) Changing from current to voltage output is load-dependent (≤ 500 Ω = current output, > 500 Ω = voltage output). Selection with buttons ▲ and ▼.
↓	2 	Setpoint value after power-on. rESEt = loading reset value (rE) (⇒see page 6) rESEtOr = set point stored zero-voltage safe tESEt = only for factory settings Selection with buttons ▲ and ▼.
↓	3 	Fixed zero 0, e.g. 3690+0 nO, YES Selection with buttons ▲ and ▼.
↓	4 	Decimal point position. if FO = nO : 0.0 .00 if FO = YES : 0.0 .000 Selection with buttons ▲ and ▼.
↓	5 	Start value for indicating range (setpoint) Setting possible from -9999(0) ... 9999(0) Digit with buttons ▲ and ▼.

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Button	Display	Description
	⁶ 	End value for indicating range (set point) Setting possible from $-9999(0) \dots 9999(0)$ digit with buttons  and  . If the value $St > En$, the output works with a decreasing characteristic.
		
	⁷ 	Setpoint limit <i>on - off</i> Selection with buttons  and  .
		
	⁸ 	Setpoint low limit Setting possible from $-9999(0) \dots 9999(0)$ digit with buttons  and  .
		
	⁹ 	Setpoint high limit Setting possible from $-9999(0) \dots 9999(0)$ digit with buttons  and  .
		
	¹⁰ 	Reset value, after power-on or reset. More details see parameter P_0 page 5 Setting possible from $-9999(0) \dots 9999(0)$ digit with buttons  and  .
		
	¹¹ 	Adjustment function (only external adjustment) L_{in} = the setpoint adjustment is running linear in range of the programmed time (see following parameter) dyn = the setpoint adjustment is running dynamically. The regulating speed increases with operation time. Selection with buttons  and  .
		
	¹² 	Adjustment time increasing ($St \dots En$) Setting possible from $1 \dots 100$ s with buttons  and  .
		
	¹³ 	Adjustment time decreasing ($En \dots St$) Setting possible from $1 \dots 100$ s with buttons  and  .
		

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Button	Display	Description
↓ 	¹⁴ 	Switching performance output A1 Function <i>oFF</i> ; <i>oNL</i> (min); or <i>oNJ</i> (max). If activated the start value will be loaded for set point. Selection with buttons  and  .
		
↓ 	¹⁵ 	Setpoint output A1 Setting possible from <i>S t</i> (start value) ... <i>E n</i> (end value) with buttons  and  .
		
↓ 	¹⁶ 	Hysteresis output A1 Setting possible from <i>1</i> ... <i>9999</i> digit with buttons  and  .
		Note: Parameters for alarm output A2 has to be configured in the same way.
↓ 	¹⁷ 	Parameter lock. <i>oFF</i> = no lock <i>C onf.</i> = configuration level locked <i>R LL</i> = configuration level and internal setpoint adjusting locked <i>C RL</i> = only for factory settings Selection with buttons  and  .
		
		Return to the working level

Ordering code

SG1010 - 1. - 2. - 3. - 4. - 5. - 6. - 7.

1. Setpoint adjustment

- 0 Setpoint adjustment with front buttons, adjustment speed dynamically, (Power-on)-reset to the last stored value or programmed reset value.
- 1 as 0, but 2 additional control inputs for external setpoint adjustment, adjustment speed dynamically or linear programmable, the external reset input is not available.

2. Alarm output

- 00 not installed
- 2R 2 alarm outputs relay SPDT

3. Analog output (standard)

- AO Analog output 0/4 ... 20 mA or 0/2 ... 10 V DC isolated to the supply voltage

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
- 09 1 x M20x1.5 Multi (2 x Ø6mm), 1 x M20x1.5

6. Unit (on the lid)

7. Additional text (on the lid, field for additional text, max. 3 x 70 mm, WxH)

Factory settings on request