EN

THRESHOLD FOR ANALOG SIGNALS WITH RELAY OUTPUT

Z113S : 1 SET-POINT
Z113D : 2 SET-POINT
Z113T : 3 SET-POINT

GENERAL FEATURES

- Programmable analog input via DIP-switch for current and voltage signals.
- Stabilized power supply for transducers 2 wires tecnique with protection against short-circuit.
- Alarms set-point regulation, regulation also for working delay and hysteresis.
- Indications on the front for presence of power supply and overflow for thresholds.
- Test-point to control set-points.
- Selection by DIP-switch for the type of alarm (min or max) for each of set-points and the state of relays (normally powered or normally not powered).
- Output with relays.
- 3 points galvanic separation, 1500 Vac between power supply and input and outputs.
- Box in auto extinguishing polycarbonate, 1 DIN module, back for rail 35 mm (DIN 46277).

TECHNICAL FEATURES

Power:	19-40 Vdc, 19-28 Vac 50-60Hz, max 2.5W.
Input:	• !Current 0-20 mA or 4-20 mA both active and passive wiring, input impedance 100 ohm, sensor's stabilized power 20 Vdc 20 mA. • Voltage 0-5 Vdc, 1-5 Vdc, 0-10 Vdc and 2-10 Vdc, input impedance 1 Mohm.
Adjustments:	• Set-point for the alarms between 1 % and 100 % of the signal to be controlled. • Working delay between 0,3 s and 30 s. • Hysteresis between 2 % and 15 % for full-scale.
Output:	Relays, 1 A 30 Vdc / 5 A 250 Vac maximum (resistive load). Z113S 1 SPDT contacts, Z113D 2 SPST contacts, Z113T 3 SPST contacts.
Errors referred to input measure's field:	Thermic coefficient: 0, 02%/°C Linearity error: 0,05%
Protection Input / power supply:	Against pulse overvoltages 400W/ms.

Environemenytal conditions:	Temperature: 0..50°C, Humidity min:30%, max 90% at 40°C not condensating (see section ***Installatione)***.
Dimensions / Weight:	17,5 x 100 x 112 mm / 200 g approx.
Norms: CE	Device complies the following norms: EN50081-2 (electromagnetic emission, industrial environement) EN50082-2 (electromagnetic immunity, industrial environement) EN61010-1 (safety)

INSTALLATION'S NORMS

Z113S/D/T is designed to be mounted DIN 46277 rail, vertical position.
For optimal functioning and life, it is necessary to assure anadequate ventilations to the modules, avoiding to place raceways or other objects that could close abat-vent. Avoid mounting modules on devices that generate heat; it is preferred mounting in the lower side of the square set.

SEVERE OPERATING CONDITIONS:

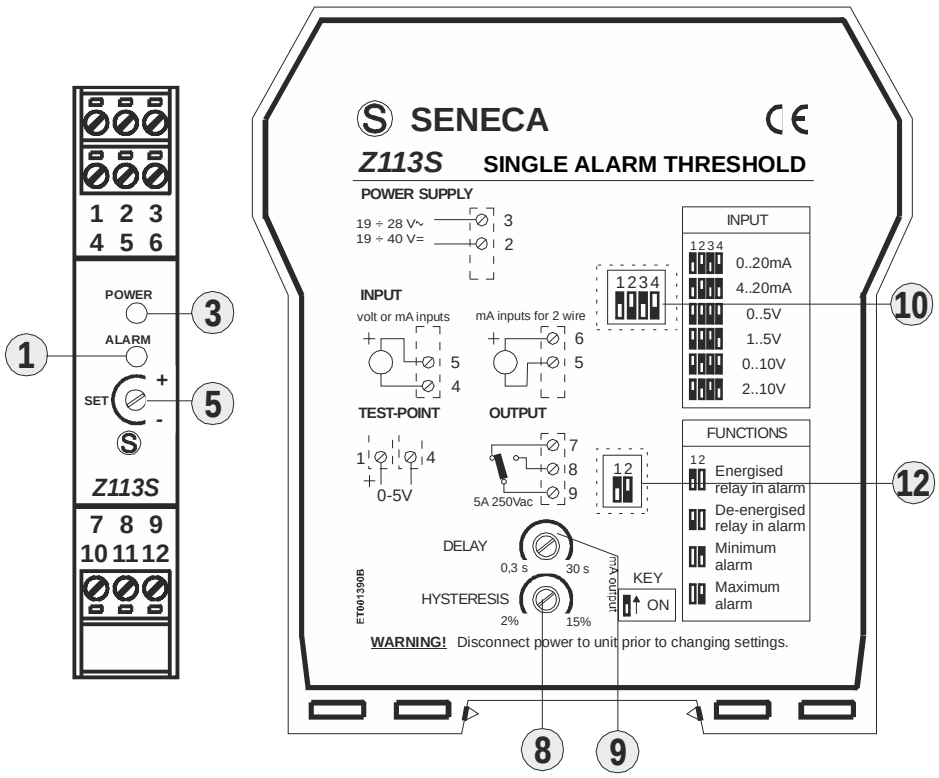
Severe operating conditions are the following ones:

- *High power supply voltage (> 30dcc / > 26 Vac).*
- *Sensor power supply at input.*

When modules are mounted side by side it is necessary to separate them at least 5 mm. in the following situations:

- Square set temperature higher than 45°C and almost one of the severe working condition exists.
- Square set temperature higher than 35°C and almost two of the severe working condition exist.

Z113S - PROGRAMMATION



1 LED Alarm

3 LED Power ON

5 Alarm Set-Point

8 HYSTERESIS adjustement

9 DELAY adjustement

10 INPUT setting

12 FUNCTION setting

Programmation for INPUT SETTING and for FUNCTION SETTING must be done when unit is not powered.

PROGRAMMATION FOR "INPUT SETTING" BY DIP-SWITCHES "INPUT" :

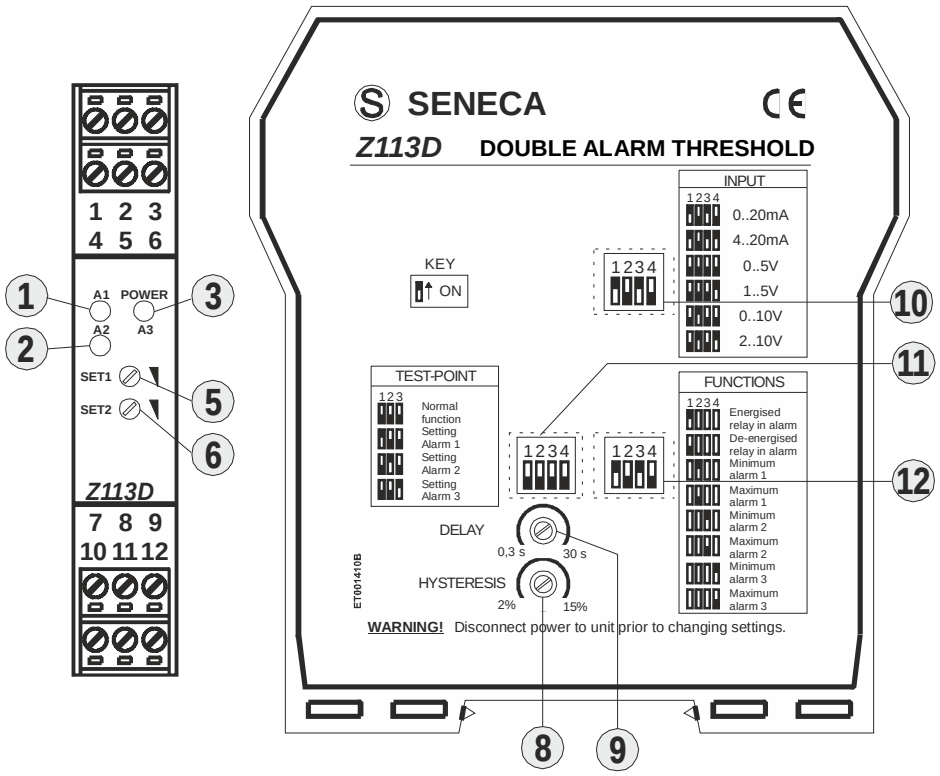
1234	1234	1234	1234	1234	1234
0 - 20 mA	4 - 20 mA	0 - 5 V	1 - 5 V	0 - 10 V	2 - 10 V

PROGRAMMATION FOR "FUNCTION SETTING" OF THE THRESHOLD BY DIP-SWITCHES "FUNCTIONS" :

12	12	12	12
Relay ENERGISED in alarm	Relay DE-ENERGISED in alarm	Alarm MINIMUM	Alarm MAXIMUM

Red LED starts instantaneously when exceeded SET-POINT and starts blinking after the operating time for the relay.

Z113D - PROGRAMMATION



1 LED Alarm 1
2 LED Alarm 2
3 LED Power ON

5 Alarm 1 Set-Point
6 Alarm 2 Set-Point

8 HYSTERESIS adjustement
9 DELAY adjustement
10 INPUT setting
11 TEST-POINT setting
12 FUNCTION setting

Programmation for INPUT SETTING and for FUNCTION SETTING must be done when unit is not powered.

PROGRAMMATION FOR “INPUT SETTING” BY DIP-SWITCHES “INPUT” :

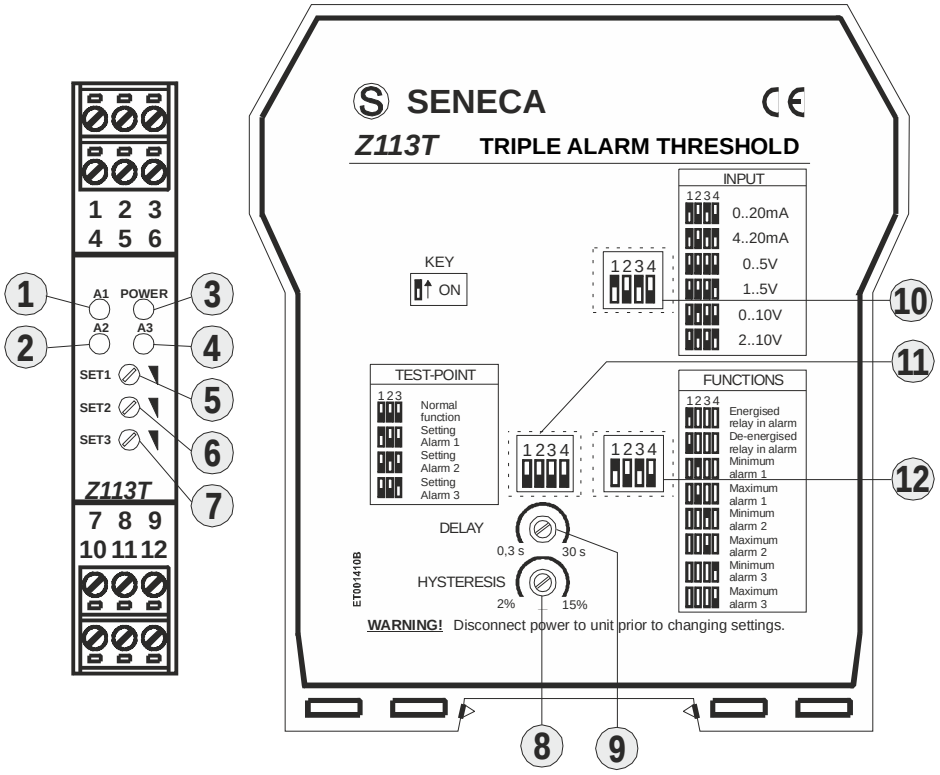
1234	1234	1234	1234	1234	1234
0 - 20 mA	4 - 20 mA	0 - 5 V	1 - 5 V	0 - 10 V	2 - 10 V

PROGRAMMATION FOR “FUNCTION SETTING” OF THE THRESHOLD BY DIP-SWITCHES “FUNCTIONS” :

Relay ENERGISED in alarm	Relay DE-ENERGISED in alarm	ALARM 1		ALARM 2		
		MIN	MAX	MIN	MAX	
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	

FUNCTIONING FOR RED LED “ALARM
Red LED “ALARM” starts istantaneusly when exceeded SET-POINT and starts blinking after the operating time for the relay .

Z113T - PROGRAMMATION



1. LED Alarm 1
2. LED Alarm 2
3. LED Power ON
4. LED Alarm 3
5. Alarm 1 Set-Point
6. Alarm 2 Set-Point
7. Alarm 3 Set-Point
8. HYSTERESIS adjustement
9. DELAY adjustement
10. INPUT setting
11. TEST-POINT setting
12. FUNCTION setting

Programmation for INPUT SETTING and for FUNCTION SETTING must be done when unit is not powered.

PROGRAMMATION FOR “INPUT SETTING” BY DIP-SWITCHES “INPUT” :

1234	1234	1234	1234	1234	1234
0 - 20 mA	4 - 20 mA	0 - 5 V	1 - 5 V	0 - 10 V	2 - 10 V

PROGRAMMATION FOR “FUNCTION SETTING” OF THE THRESHOLD BY DIP-SWITCHES “FUNCTIONS” :

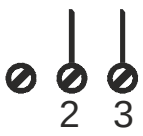
Relay ENERGISED in alarm	Relay DE-ENERGISED in alarm	ALARM 1		ALARM 2		ALARM 3	
		MIN	MAX	MIN	MAX	MIN	MAX
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

Red LED starts instantaneously when exceeded SET-POINT and starts blinking after the operating time for the relay.

ELECTRICAL CONNECTIONS

It is reccommanded the use shilded cables for connecting signals; shield must be connected to a preferred ground for the instrumentation. It is a good practice to avoid routing conductors near power appliances sush as inverters, motors, induction furnaces etc.

POWER SUPPLY

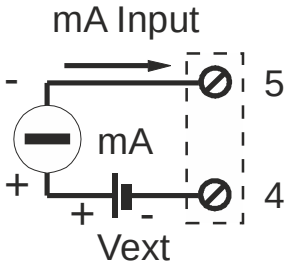


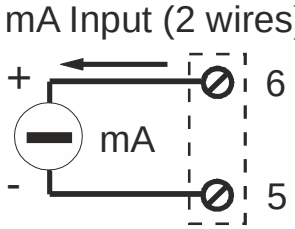
Power supply voltage must be in a range from 19 to 40 Vdc (polarity indifferent), 19 and 28 Vac; see I***NSTALLATION NORMS.***

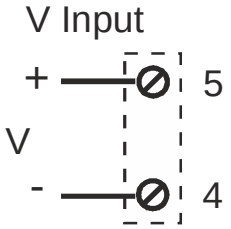
Upper limits have not to be exceeded, on the contrary modules will be damaged.

It is necessary to protect power supply source from possible module's damages by a fuse correctly calculated.

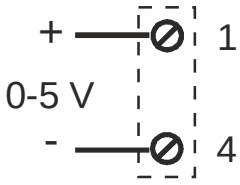
INPUT







TEST-POINT



OPERATING VALUE CALIBRATION

Operating value calibration must be done by the front trimmers :
SET (Z113S)
SET 1 and SET 2 (Z113D)
SET 1, SET 2 and SET 3 (Z113T)
and can be verify using a common digital tester setted to read voltage at least 5 Vdc and connected to the negative cap to the clamp 4 and with the positive one to the clamp 1.
For Z113D and Z113T to display alarm voltage you are calibrating you have to preset DIP-switches as shown in the following table.

 Alarm 1 TEST-POINT Z113D and Z113T	 Alarm 2 TEST-POINT Z113D and Z113T	 Alarm 3 TEST-POINT Z113T

Voltage to be read is given by the following formula :

V = 0,05 x VS (where VS is the value in % to which threshold have operate)

EXAMPLE : To calibrate alarm threshold atl 35% input signal, set potentiometer «SET» till you read V = 0,05 x 35 = 1,75 Vdc.

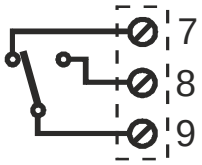
SETTING FOR DELAY ADJUSTMENT :
Setting for delay adjustment have to be done by the lateral trimmer “DELAY” and can be in a range from min. 0,3 s (trimmer completely rotate anticlockwise) to max. 30 s (trimmer completely rotate clockwise).

SETTING FOR HYSTERESIS :
Hysteresis setting (in % of the operating value) has to be done by lateral trimmer “HYSTERESIS” and can be in a range from min. 2 % (trimmer completely rotate anticlockwise) to max. 15 % (trimmer completely rotate clockwise)

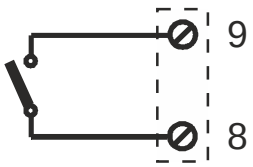
OUTPUTS

Maximun load for relays is 5 A 250 Vac (resistive load)..
To drive inductive loads (as electrovalves coils, remote control switches, etc.) it is necessary to use filters dedicated to the extra voltage spike due to the off and on of those loads that in other way drastically reduce relay contact electrical life.

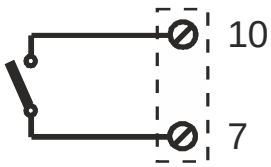
Z113S



Z113D

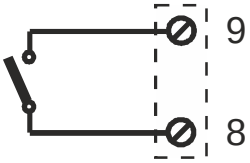


Alarm 1

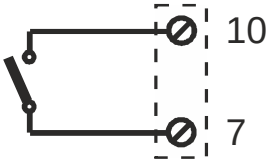


Alarm 2

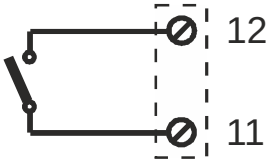
Z113T



Alarm 1



Alarm 2



Alarm 3

Disposal of Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collection programs)
This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of this product, please contact your local city office, waste disposal service or thè retail store where you purchased this product.

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