

Serie MR410



- 2 protected Silicon switches (typ. 12V / 2A)
- Switching-threshold, Off switch time delay, deadtime adjustable with tuning potentiometer
- max. preset threshold : +/-10° custom specific values on request
- Thresholds symmetrically to zero point
- Suitable for industrial and mobile application:
 - Working temperature range: -40 °C bis +80 °C
 - Degree of protection: IP65/67

The inclinometer switch can be useful, if at a preset inclination value an actor has to be powered. It can work as a simple switch or as a bang-bang servo.

Switching threshold, Off switch time and deadtime are adjustable with 2 tuning potentiometers.

The adjustment of the switching thresholds can be done by teach-in or adjusting with the potentiometers. Under use of the potentiometers the switching thresholds are preset symmetrically to zero point. Teach-in can be done direct on the application using the 2 tip switches. The switching thresholds can be preset unsymmetrically. Additional corrections are possible by tuning the potentiometers.

The Off-switch-time is adjustable individual for each channel within the range (0...32)s.

The Deadtime for both channel has the same value and is settable in the range (0...2)s

Potentiometer and tip switches are reachable after removing of the lid. After unscrewing the 4 screws the lid is removable.

Importantly to note it is that the switch is open with 0°!

Serie MR410

Technical Data

Signalparameters Ta=(- 40..80) °C	Min	Typ	Max	Unit
Parameter				
Measuring range (1)	-10		+10	degree
Resolution		0,25		degree
Temperature drift (Zero Point)	0,008	0,02	0,035	degree / K
Linearity @ 25 °C		0,25	0,5	degree
Offset @ 25 °C (Zero Point)	-0,2	0,25	0,5	degree
Cross sensitivity			5	degree
Cut- off frequency (3 dB)	-0,2		4	Hz

(1) Measuring range (switching- threshold) factory programmable in range + / - 20 °

Power supply Ta= (-40..80) °C	Min	Typ	Max	Unit
Parameter				
Operating voltage	9	12	15	V
Operating current		40	60	mA
Operating current under short circuit of output			2	A
With reverse voltage protection				

(2) without switching current

Electrical connection Ta= 25 °C	Outputsignal			Unit
Sensor- Actor- Connector, male M12, 5- conductors	Min	Typ	Max	
Parameter				
Output current		2	3	A
Output voltage (3)			Supply-voltage	V
(3) depends on switching current and supply voltage				

Environment parameters	Min	Max	Unit
Parameter			
Operating temperature	-40	80	°C
Storage	-40	85	°C
		70	% RH
Transportation	-40	85	°C
Humidity	90% RH non-condensed		
Shock (sensing element)	3500 g		
Shock (sensor complet)	IEC 68-2-29 Halfsinusoidal, 25g Shock duration 6ms 1000 cyles		
Vibration	IEC 68-2-6 Sine acceleration 3g, 10 bis 500 Hz Frequency 1 Octave/min 2h per Achsis (x,y,z)		

Serie MR410

EMC

Emission: EN 55011 group 1 class A
EN 50081 – 1
Immunity: IEC 61000-4-4 (Burst) Level 3
IEC 61000-4-5 (Surge) Level 1
ESD: IEC 61000-4-2 Level 3 Direct +/- 6kV; Air +/- 8kV
Functional status Class C

Dimensions und Weight

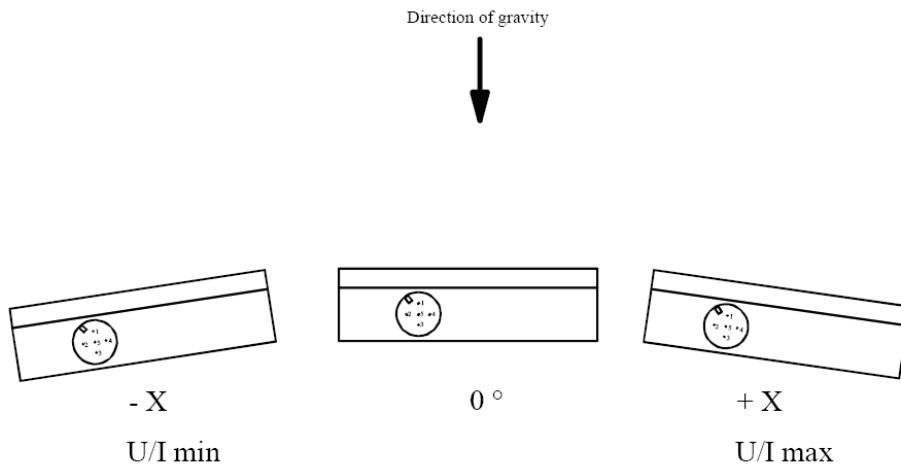
Length x Width: 115 mm x 65 mm
Height: 30 mm
Weight: ca. 250 Gramm

Construction / Housing

Aluminium Diecast

Installation

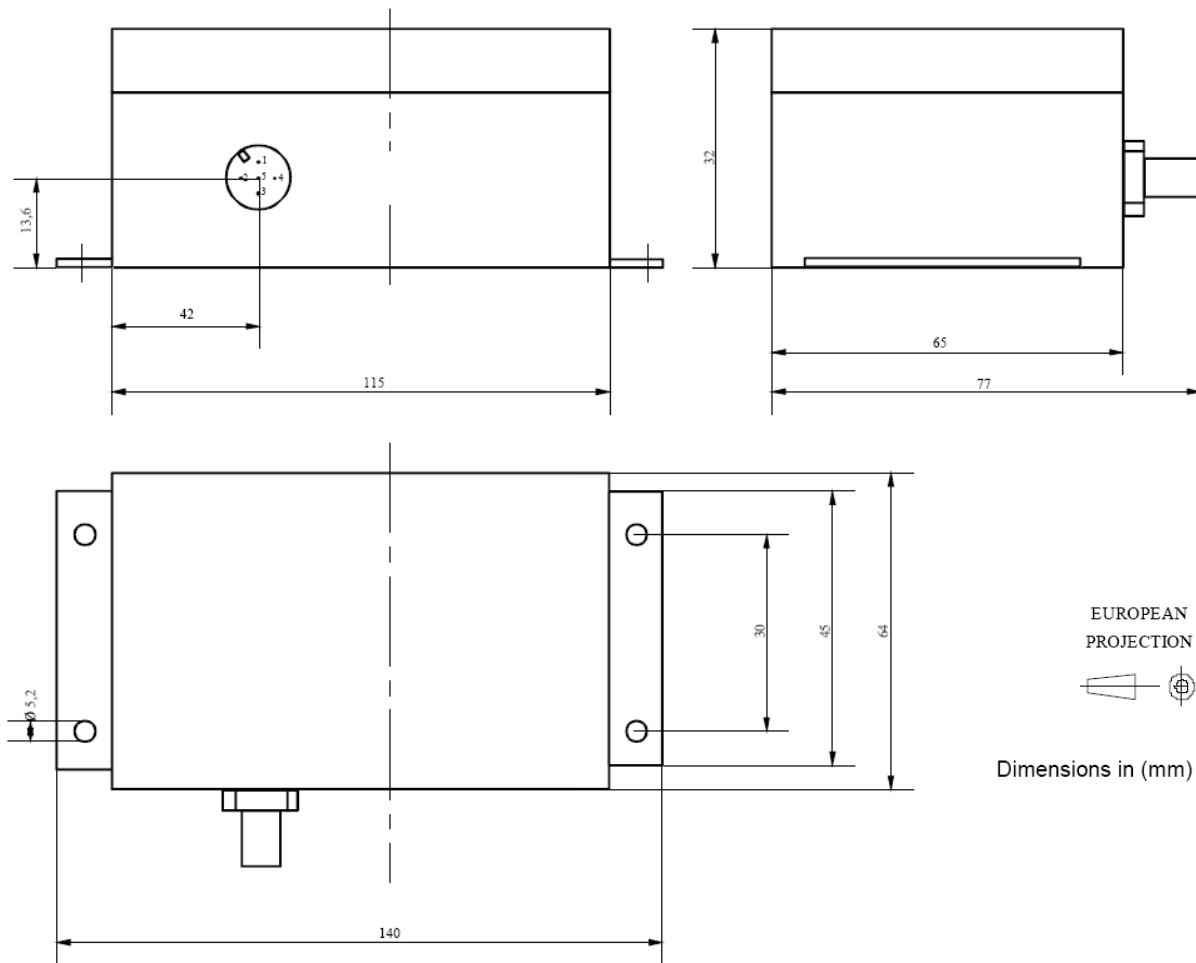
Mounting: Screwmounting



Connection table

Pin	Colour	Symbol	Description
1	brown	Ucc	power supply
2	white	OUT +	output switch + direction
3	blue	GND	ground
4	black	OUT -	output switch - direction
5	green		do not connect !

Serie MR410



4 . Threshold setting

- Function- selection- input Pin5, (green) to be connected to GND
- Keep S1 (left tip switch) pressed before and during connection of the power supply Vcc=12V (Pin1, brown) ; GND (Pin3, blue)
- If the LED on the PCB starts flashing, release tip switch S1
- Turn sensor to - x° direction
- Press S2 (right tip switch) until LED lights up static
- Turn sensor to + x° direction. The LED starts flashing.
- Press tip switch S1 on the PCB until LED lights up static
- Turn sensor to + 0° direction. The LED remains OFF.
- Remove GND potential from function- selection- input Pin5, green
- Switch OFF power supply.

Order key

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