SCGI24

Single Channel Universal Galvanic Isolator

PRELIMINARY TECHNICAL INFORMATION

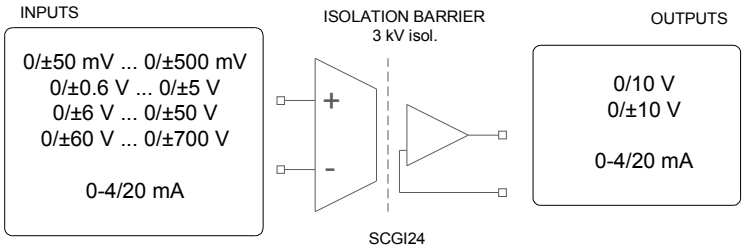
HIGHLIGHTS

- Shunt and voltage feedback isolation.
- Voltage and current standard output values.
- Easy mounting and set up on standard DIN rail.
- Unipolar and bipolar signaling.

non-contractual photo

OVERVIEW

This galvanically isolated universal transducer are designed for sensors / measuring sensors which state the values in a measurement range of negative and positive signals (bipolar) and also unipolar. This voltages and current signals are galvanically isolated and converted into standardised analogue signals. DIP switches simplify configuration.
It offers a neat and easy way to provide galvanic isolation for standard 60 mV shunt current loops and voltage feedback signaling for our range of SCR controller and firing boards.



TECHNICAL ESPECIFICATIONS

Description		Notes / Test Conditions	Min	Typ	Max	Units
Input supply voltage	$V_{IN\ DC}$		15	24	30	V_{DC}
Input supply current	$I_{IN\ DC}$			40	105	mA
Power consumption	P_N				2.5	W
Protection degree				IP-20		
Combustibility class				UL94		
Storaging temperature range	T_{stg}		-40		80	ºC
Operating temperature range	T_{op}		-10		60	ºC
Power to input isolation voltage	V_{ISOp-i}			1500		V_{AC}
Power to output isolation voltage	V_{ISOp-o}			1500		V_{AC}
Input to output isolation voltage	V_{ISOi-o}			3000		V_{AC}

Data at T_a = 25 °C, V_{IN} = 24 V_{DC} and rated values, unless otherwise indicated

CONFORMALS

UL 94 Flammability rate	V-0
Electromagnetic compatibility	EMC 89/336/EEC
Low voltage directive	73/23/EEC
Interference immunity according to	EN 50082-1 / EN 50082-2
Disturbance emitions according to	EN 50081-1 / EN 50082-2

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INPUT SIGNALS

Description		Notes / Test Conditions	Min	Typ	Max	Units
Maximum current I1 input	$I_{1\ max}$				500	mA
I1 Input impedance	Z_{I1}			120		Ω
Current input ranges available	I_{IN}	*I1, I2*		0-20 mA 4-20 mA 0-5 mA		
Maximum voltage V1 input	$V_{1\ max}$		-5.5		5.5	V
V1 Input impedance	Z_{V1}			500		kΩ
Maximum voltage V2 input	$V_{2\ max}$		-55		55	V
V2 Input impedance	Z_{V2}			330		kΩ
Maximum voltage V3 input	$V_{3\ max}$		-770		770	V
V3 Input impedance	Z_{V3}			1		MΩ
Voltage input ranges available		*V1*		0-60 mV 0-5 V		
		V2		0-50 V		
		V3		0-700 V		

OUTPUT SIGNAL

Description		Notes / Test Conditions	Min	Typ	Max	Units
Maximum voltage output	$V_{OUT\ max}$	*output as a voltage signal*	-12		12	V
Maximum output load	$R_{LV\ OUT}$		1.0			kΩ
Maximum current output	$I_{OUT\ max}$	*output as a current signal*			25	mA
Maximum current output	$R_{LI\ OUT}$				600	Ω
Voltage output ranges available	V_{OUT}			0/±5 V 0/±10V		
Current output ranges available	I_{OUT}			0/20 mA 4/20 mA		

ACCURACY AND DYNAMIC PERFORMANCE DATA

Description		Notes / Test Conditions	Min	Typ	Max	Units
Overall accuracy	X_G	T_a = +25 °C			0.03	%
Linearity	ε_L			0.02		%
Current termal drift	I_{OT}	T_a = -10 to +60 °C		0.5		µA/ºK
Voltage termal drift	V_{OT}	T_a = -10 to +60 °C		0.2		mV/ºK
Low-pass filter response time	$t_{D\ (10-90)}$	*Filter in LOW configuration* *Filter in HIGH configuration*		25 250		ms

CONNECTIONS

Description	Notes / Test Conditions	Min	Typ	Max	Units
Device configuration	DIP switch & potentiometers				
Supply, input and output signals	Plug connectors, with M3 screw.				
Connectors fixing screw torque			5.0		Nm
Cable section				12	AWG

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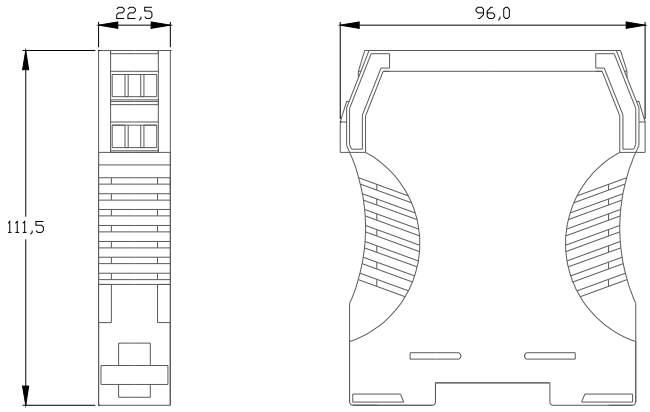
MECHANICAL DIMENSIONS

Description		Units
Enclosure	111.5 x 96.0 x 22.5	mm
Fixations	*Fast mounting on EN50022 rail.*	
Weight (aprox)	140	gr

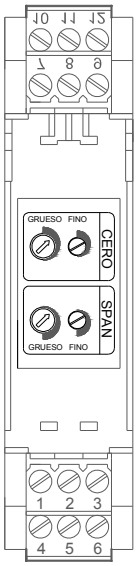


(All dimensions in mm)

SCALE OFFSET AND OUTPUT RANGE ADJUST

On the frontal panel you can adjust the scale offset by means of the 2 potentiometers labeled as “CERO”. An initial coarse adjust using “GRUESO” labeled 16 discreet step potentiometer, and a fine adjust with “FINO” labeled potentiometer. By applying the zero level input signal to the module, then it can be calibrated adjusting the output to zero.

In the same way you can adjust the span (full scale value) by means of the 2 potentiometers labeled as “SPAN” to precisely adjust the range of your input signal. By, for example, applying the full scale level input signal to the module, then it can be calibrated adjusting the output to follow precisely the input signal magnitude.



Note:
Please let 15 min of working time to reach the thermal stabilization of the converter and measuring instrument before making any adjustments.

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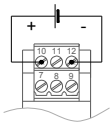
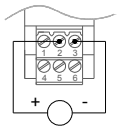
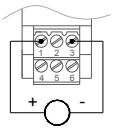
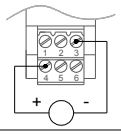
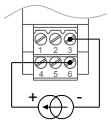
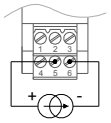
ELECTRICAL CONNECTIONS

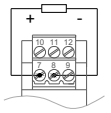
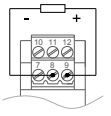
DC POWER SUPPLY

Power Supply	Terminal Allocation	
24 V DC Supply	[10] : "+24V" [12] : "0V"	

INPUT SIGNALS

Measuring Function	Measuring Range Limits	Terminal Allocation	
DC Voltage	≤ ±500 mV (V1)	[2] : "5V/mV" [3] : "0V"	
	> ±500 mV to ±5 V (V1)		
	> ±5 V to ±50 V (V2)	[1] : "50V" [3] : "0V"	
	> ±50 V to ±700 V (V3)	[4] : "700V" [3] : "0V"	
DC Current	0-4/20 mA (I1: active)	[6] : "+I" [3] : "-I"	
	0-4/20 mA (I2: passive)	[5] : "Exc" [6] : "+I"	

OUTPUT SIGNALS

Output Measure	Measuring Range Limits	Terminal Allocation	
DC Voltage	0/10 V 0/±10 V	[7] : "+V" [8] : "-V"	
DC Current	0-4/20 mA	[9] : "+I" [8] : "-I"	

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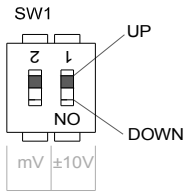
CONFIGURATIONS

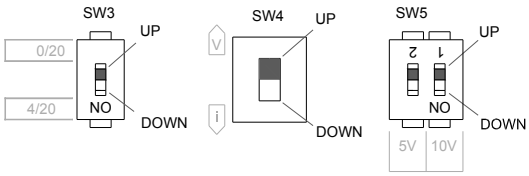
INPUT SELECTION DIPSWITCH CONFIGURATION

INPUT	SW1	
0/10 V	UP	UP
0/±10 V	UP	DW
0/60 mV	DW	UP
0/±60 mV	DW	DW
4/20 mA	UP	UP
0/20 mA	UP	UP
POT	UP	UP



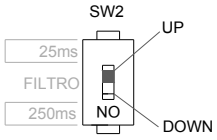
OUTPUT SELECTION DIPSWITCH CONFIGURATION

OUTPUT	SW3	SW4	SW5	
0/10 V	UP	UP	UP	UP
0/±10 V	UP	UP	UP	DW
0/±5 V	UP	UP	DW	UP
4/20 mA	DW	DW	UP	UP
0/20 mA	UP	DW	UP	UP

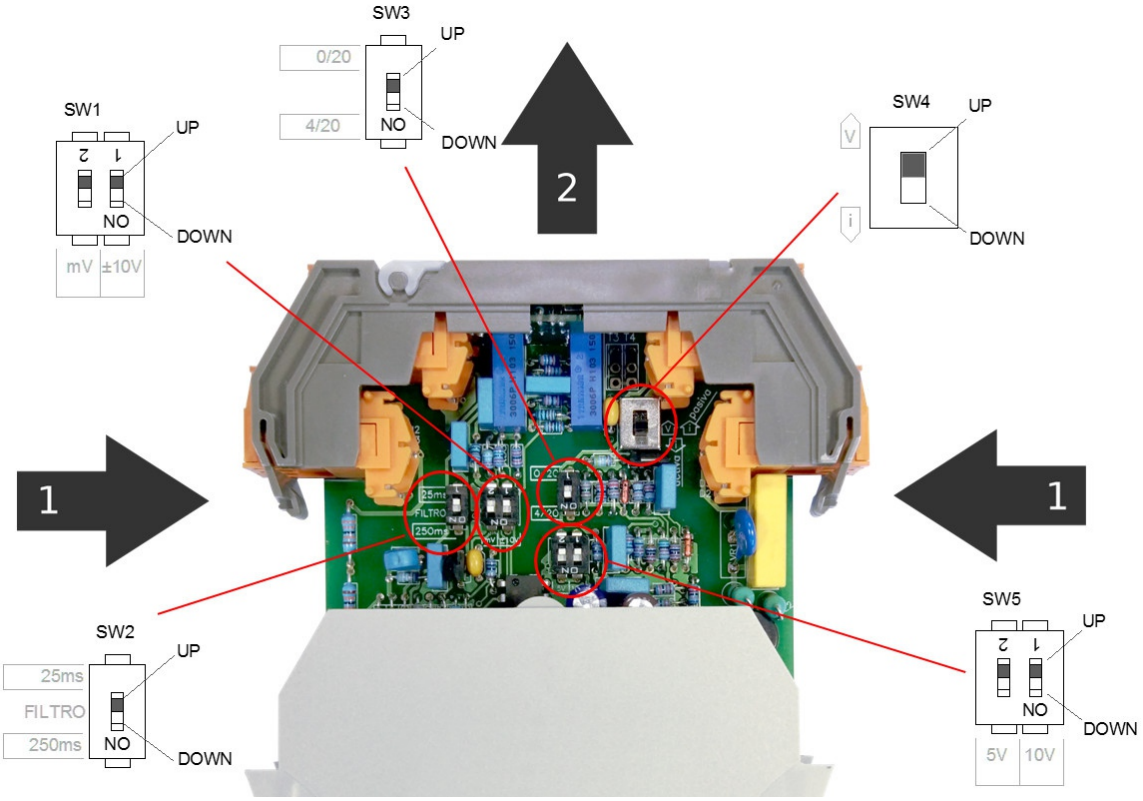


STABILIZATION LOW PASS FILTER DIPSWITCH CONFIGURATION

OUTPUT FILTER	SW2
LOW 25 ms	UP
HIGH 250 ms	DW



Note: To access the internal configuration dip-switches first push (1) both lateral side's tabs and then pull (2) vertical the connectors block as is shown in the next image.



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