

PRELIMINARY TECHNICAL INFORMATION

HIGHLIGHTS

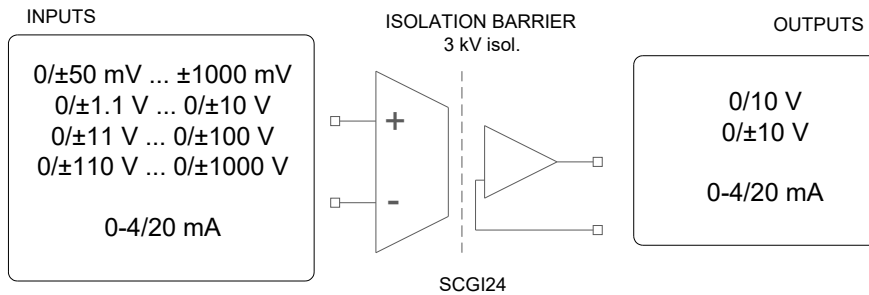
- Shunt and voltage feedback isolation
- Voltage and current standard output values
- Easy mounting and set up on standard DIN rail
- Unipolar and bipolar signaling
- True RMS measurement



non-contractual photo

OVERVIEW

This galvanically isolated universal transducer is designed for sensors or measuring devices that operate with both bipolar (positive and negative) and unipolar signals. These voltage and current signals are galvanically isolated and converted into standardised analogue outputs. Configuration is simplified using DIP switches. It provides an efficient solution for galvanic isolation in standard 60 mV shunt current loops and voltage feedback signals, specifically for use with our range of SCR controllers and firing boards.



TECHNICAL SPECIFICATIONS

Description	Notes / Test Conditions	Min	Typ	Max	Units
Input supply voltage DC	$V_{IN DC}$	20	24	250	V_{DC}
Input supply voltage AC	$V_{IN AC}$	20	230	250	V_{AC}
Power consumption	P_N			2.5	W
Protection degree			IP-20		
Combustibility class			UL94 V0		
Storing temperature range	T_{stg}	-40		80	°C
Operating temperature range	T_{op}	-10		60	°C
Power to input isolation voltage	$V_{ISO p-i}$		1500		V_{AC}
Power to output isolation voltage	$V_{ISO p-o}$		1500		V_{AC}
Input to output isolation voltage	$V_{ISO i-o}$		3000		V_{AC}

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

CONFORMALS

UL 94 Flammability rate	V0
Electromagnetic compatibility	EMC 2014/30/EU
Low voltage directive	DBT 2014/35/EU
Interference immunity according to	EN 61000-6-2
Disturbance emissions according to	EN 61000-6-3



INPUT SIGNALS

Description	Notes / Test Conditions	Min	Typ	Max	Units
Maximum current I1 input	$I_{1\max}$			500	mA
Admissible signal frequency	f_s	0		800	Hz
I1 Input impedance	Z_{I1}		120		Ω
Current input ranges available	I_{IN}		0-20 mA 4-20 mA 0-5 mA		
Maximum voltage V1 input	$V_{1\max}$	-10		10	V
V1 Input impedance	Z_{V1}		500		k Ω
Maximum voltage V2 input	$V_{2\max}$	-100		100	V
V2 Input impedance	Z_{V2}		500		k Ω
Maximum voltage V3 input	$V_{3\max}$	-1000		1000	V
V3 Input impedance	Z_{V3}		1		M Ω
Voltage input ranges available			0-1000 mV 0-10 V 0-100 V 0-1000 V		

OUTPUT SIGNAL

Description	Notes / Test Conditions	Min	Typ	Max	Units
Maximum voltage output	$V_{OUT\max}$	-12		12	V
Maximum output load	$R_{LV\,OUT}$	1.0			k Ω
Maximum current output	$I_{OUT\max}$			25	mA
Maximum current output	$R_{LI\,OUT}$			500	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

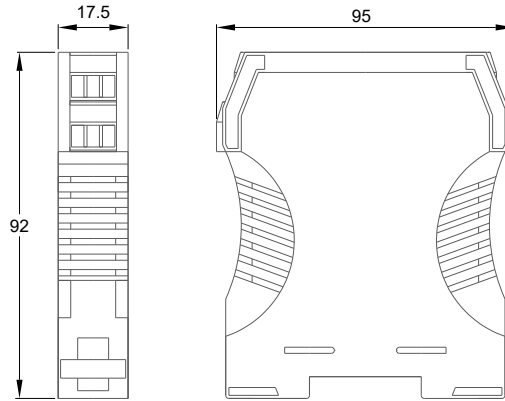
Description	Notes / Test Conditions	Min	Typ	Max	Units
Overall accuracy	X_G $T_a = +25\text{ }^\circ\text{C}$			0.3	%
Linearity	ϵ_L		0.1		%
Current termal drift	I_{OT} $T_a = -10\text{ to }+60\text{ }^\circ\text{C}$		0.5		$\mu\text{A}/^\circ\text{K}$
Voltage termal drift	V_{OT} $T_a = -10\text{ to }+60\text{ }^\circ\text{C}$		0.2		mV/°K
Low-pass filter response time	$t_{D(10-90)}$		50 250		ms

CONNECTIONS

Description	Notes / Test Conditions	Min	Typ	Max	Units
Device configuration	DIP switch & potentiometers				
Supply, input and output signals	Polarized plug connectors, with M3 screw				
Connectors fixing screw torque			0.5		Nm
Cable section				< 2.5 mm ² , 12 AWG 250 V/12 A	

MECHANICAL DIMENSIONS

Description		Units
Enclosure	92 x 95 x 17.5	mm
Fixations		
Weight (approx.)	100	gr

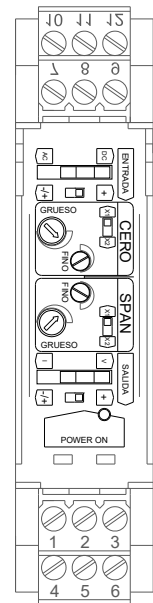


SCALE OFFSET AND OUTPUT RANGE ADJUST

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 discrete 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.

On this frontal can also be set the type of input signal, between AC signal or DC signal, unipolar or bipolar and the kind of output signal between voltage output or current output and unipolar or bipolar signal.



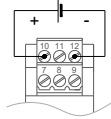
Note:

Please let 5 min of working time to reach the thermal stabilization of the converter and measuring instrument before making any adjustments.

ELECTRICAL CONNECTIONS

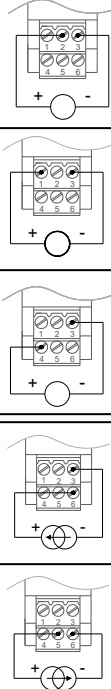
DC POWER SUPPLY

Power Supply	Terminal Allocation
24...250 V (AC/DC) supply	[10] : "+/~"
	[12] : "-/~"



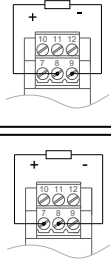
INPUT SIGNALS

Measuring Function	Measuring Range Limits	Terminal Allocation
DC Voltage	$\leq \pm 1000 \text{ mV (V1)}$	[2] : "10V/mV"
	$> \pm 500 \text{ mV to } \pm 10 \text{ V (V1)}$	[3] : "0V"
	$> \pm 10 \text{ V to } \pm 100 \text{ V (V2)}$	[1] : "100V" [3] : "0V"
DC Current	$> \pm 100 \text{ V to } \pm 1000 \text{ V (V3)}$	[4] : "1000V" [3] : "0V"
	0-4/20 mA (I1: active)	[6] : "+I" [3] : "-I"
	0-4/20 mA (I2: passive)	[5] : "+I" [6] : "-I"



OUTPUT SIGNALS

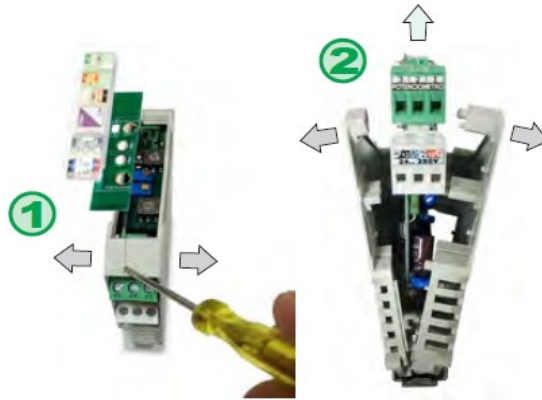
Output Measure	Measuring Range Limits	Terminal Allocation
DC Voltage	0/10 V	[8] : "+V"
	0/ ± 10 V	[9] : "-V"
DC Current	0-4/20 mA	[8] : "+I"
		[9] : "-I"



INTERNAL CONFIGURATIONS

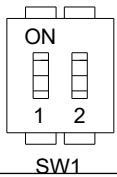
ACCESS TO INTERNAL CONFIGURATIONS

To access the internal configurations of the device, open the enclosure containing the PCB using a screwdriver or a sharp-edged tool to separate the two plastic parts of the casing (1) maintain both lateral side's tabs partially opened (or remove the DIN clip and spring) and then pull (2) vertical the PCA with its connectors block as is shown in the next image.



CURRENT OUTPUT DIP-SWITCH CONFIGURATION (SW1)

SW1 depicted on the image sets the 0 output for current output signal to 0 mA or 4 mA.



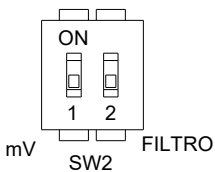
SW1:1 ON, SW1:2 OFF – Current 0 output set as 0 mA



SW1:1 ON, SW1:2 ON – Current 0 output set as 4 mA (by default)

VOLTAGE INPUT SCALE & STABILIZATION LOW PASS FILTER DIP-SWITCH CONFIGURATION (SW2)

SW2 sets the voltage scale for voltage input signal, can be set to [mV] scale or [V] scale and also sets the filter level between 50 ms or 250 ms.



SW2:1 OFF – Input scale set for [mV]



SW2:1 ON – Input scale set for [V] (by default)



SW2:2 OFF – Low pass filter set for 50 ms (by default)



SW2:2 ON – Low pass filter set for 250 ms



Note:

By default SCGI24 is factory calibrated for 4-20 mA input to 0-10 V output. Internal DIP switches SW1: ON-OFF (4 mA), SW2: OFF-OFF (LF, mV). Other configurations available by demand.

Cost Effective Products

SEMICODE ELECTRONICA

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Advance Information: The product design is complete and final characterisation for volume production is well in hand.

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