

• Characteristics

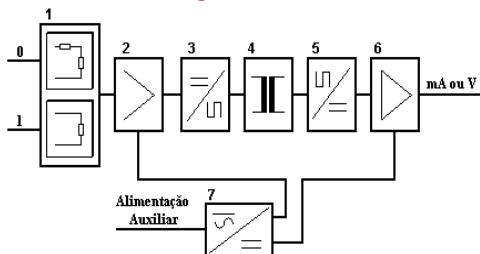
- Measuring of direct voltage and current signals and galvanic isolador.
- Linear measuring field.
- Output signal with or without suppressed zero.
- Galvanic isolation between in- and output and auxiliary power supply.
- Reduced size for mounting space saving.
- Case type housing for fastening with screws, or on rail.

• Application

The galvanic separation is used for galvanic isolation between independent circuits of a same loop, with different electric potentials, which can damage the instruments and cause undesirable interference to the measuring process..

It serves properly to convert a direct current or voltage input signal into a proportional output signal, which is independent on the load. The output signal is compatible for connection of various instruments, such as: analogical or digital indicators, graph recirdes, controllers, analogical-digital converters and others.

• Functioning



The input signal is conditioned by the signal conditioner (1) according to the type of input, voltage or current. In case of a voltage input signal, a resistive divider is available, which conditions the input signal, and in case of current input, a shunt resistor transforms de current signal into a voltage signal. The signal is amplified in module (2), form this it is sent to the module (3), which transforms this direct current signal into a alternating current signal with an amplitude, which is proportional to the input signal. The transformer of module (4) is a galvanic isolator between the in- and output signals. Module (5) rectifies the alternating current signal into a direct current signal, which is proportional to the input signal. The output amplifier (6) emits an output signal, which is independent on the output load. All modules are powered by a stabilized power supply (7), which isolates the auxiliary power supply from the input signal as well as the output signal



Technical data (NBR 8145)

Input	with or without suppression
Voltage	0..25mV up to 0..750V; 1..5V (others on consult)
Current	0...1mA up to 0...20mA; 4...20mA (others on consult)
Input resistance	Voltage input: $UI \geq 10V : 80k\Omega/V$ $UI \geq 10V : 5k\Omega/V$ Current input: $\frac{60mV}{I (mA)}$ Error limit 0,5% $\leq 1,00VA$ for error limit 0,25% Current input: $\leq 0,15VA$ permanently: 1,5 UrtDI ; 2IrtDI briefly 4UrtDI/1s; 50IrtDI/1s
Overload	
Output	
Current	0...1/5/10/20mA, 4...20mA (others on consult)
Signal limit	$\leq 1,5$ IrtDO, UrtDO max. 25V RC = infinite
Load limit	$Rc = \frac{15.000(mV)}{\text{Max. output signal (mA)}}$ f.ex.: $Rc = 750\Omega$ for 20mA
Output with load divider (Optional)	To calculate RC use 7.500mV instead of 15.000mV, the results will be the same for both outputs
Voltage	0...10V ; $Rc \geq \frac{Uo}{20mA}$
Residual ripple	$\leq 0,5\%$ (peak to peak) •
Power supply:	
AC	voltage: 110; 220V $\pm 20\%$ (others on consult) frequency: 45...65Hz consumption 5VA approx (3VA em 60Hz)
DC	voltage 24V $\pm 25\%$ 48; 125V -15...+25% (others on consult) consumption 4W approx

Influence magnitudes

Error limit	0,5% 0,25% (Optional)
Reference conditions	
Input:	$U I = U_{rtd} I$ ● $I I = 0 \dots I_{rtd} I$ ●
Auxiliary power supply:	$U_{AX} \pm 2\%$
Load:	0,5RC máx.
Ambient temperature:	25°C ± 2 K
Heat time	± 20 min..
Additional error above 1,2I _{rtd} I ou U _{rtd} I	$\leq 0,2\%$ ●
Linearity deviation	$\leq 0,2\%$ ● (included in error limit)
Load	$\leq 0,05\%$ ● RC = 0...RC max. (included in error limit)
Temperature	$\leq 0,2\%$ ● /10 K; rated temperature 25°C
Auxiliary power supply	$\leq 0,05\%$ ● within the permitted tolerance range for the supply voltage
Response time	≤ 200 ms ●
External magnetic fields	$\leq 0,5\%$ ● for field intensity of 0,4 kA/m
Radio frequency interference	$\leq 0,5\%$ ● between 27...460MHz at a distance 1m; power 1 W

Electrical test

Test voltage between for all circuits mutilly - 2,5kV/1 min. 60Hz

Test between direct current power supply and output:

$U_{AX} = 24$ VDC...Test voltage = 0,75kV/1 min. 60Hz

$U_{AX} = 48$ VDC...Test voltage = 1,5kV/1 min. 60Hz

$U_{AX} = 110/125$ VDC...Test voltage = 2,5kV/1 min. 60Hz

Pulse voltage 5kV; 1,2/50 us; 0,5Ws

Peaks 2,5kV;1MHz; 400 pulses / 1s

Notes:

- Related to the final output value.
- U_{rtd} = Rated voltage
 I_{rtd} = Rated current
 - Response times below 200 ms result in bigger residual ripple.

Construction and Mounting

Type	Case
Housing	Base and cover of plastic
Fastening	Surface mounting with two screws M4, or using DIN rail.
Electrical connection	Frontal terminals for eye and fork type cable shoes
Protection class (NBR 6146)	IP 50 in housing IP 20 at the connection terminals
Weight	$\pm 0,7$ kg

Climatic conditions

Operation temperature	-20...+60°C
Functioning temperature	-25...+70°C
Transport and storage temp.	-40...+80°C
Relative humidity	$\leq 75\%$ of annual average with light condensation (others on consult)

Mechanical test

Impact	acceleration 30g during 11ms
Vibration	acceleration 2g frequency 5..150Hz

Galvanic Isolator ETI 30

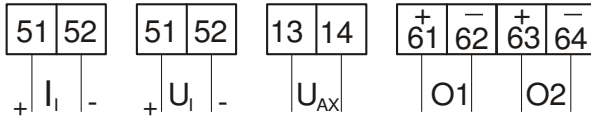
for direct voltage or current signals

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Electric Connections



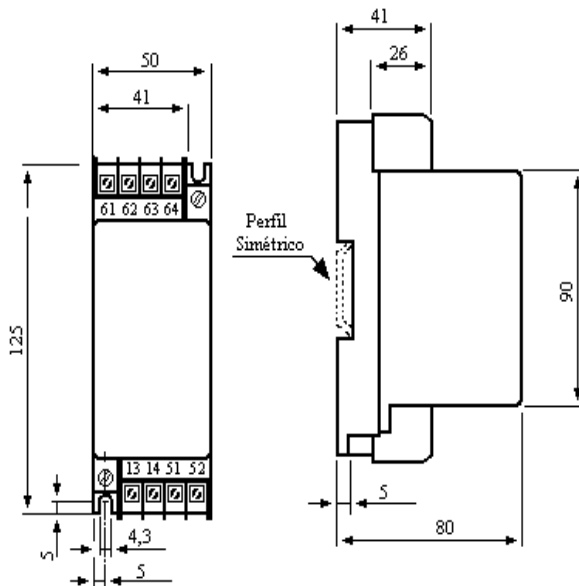
- II, UI = Input Current or Voltage
U_{AX} = Auxiliary power supply
- O1 = Current or voltage output - normal
 - O2 = Output with load divider (double output)
Optional

Notes

- When using only O2 jump terminals 61 and 62
- When using “double output”, there is no galvanic isolation between the output signals.

Dimensional Drawing

Dimensions em mm



Additional information

The following items contain tips and cautions to be observed by the user for a good functional performance, as well as the maintenance of the instrument and the safety of the installations.

Cautions

Be sure the voltages and currents to be connected to the instrument, are compatible.

Loosen all connections from the instrument before removing it from the installation .

Mounting Instructions

Observe the ambient temperature range. At the place of installation, values for vibration, dust, dirt and humidity, which must remain between the limits, established by the protection class of the housing and the climatic group, specified in this data sheet, have to be observed .

For fastening on flat area use two M4 screws. For mounting on DIN rail, use the snap-in device on the rear of the instrument.

The connections can be made with eye or fork type cable shoes.

Instructions for use

When connections have been made, switch on the power supply and check at the output the functioning of the transducer.

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Ordering information

Ordering information	Catalog number									
	N	0	0	3	1	-	-	-	-	-
Transducer cc/cc and Galvanic Isolator ETI-30										
Housing Case						8				
Input Signal 0... 20mADC 4... 20mADC 0... 5VDC 0... 10VDC Others (between 0...1mA up to 0...20mADC) and (between 0... 25mV up to 750VDC)										1 2 3 4 0
Auxiliary power supply 110Vac 120Vac 127Vac 220Vac 24Vdc 48Vdc 110Vdc 125Vdc Others										01 02 03 04 07 08 10 11 00
Output Signal 0...1mADC 0...5mADC 0...10mADC 0...20mADC 4...20mADC 0...10VDC Others (+/-1mAdc, +/-20mAdc, +/-1Vdc e +/-15Vdc)										1 2 3 4 5 7 0
Options Error limit 0,25% Output with load divider (double output) Standard (Class 0,5%)										1 2 5
Additional Information Standard Complement (Inform input signal)										1 C

For quoting and ordering please issue your order according to the specification text

Example:

Galvanic Isolator ETI-30 case

Input Signal 4...20mADC
 Auxiliary power supply 220VAC
 Output Signal 4...20mADC
 Optional Class 0,5%
 Additional information Standard

Code number : N00318204551