

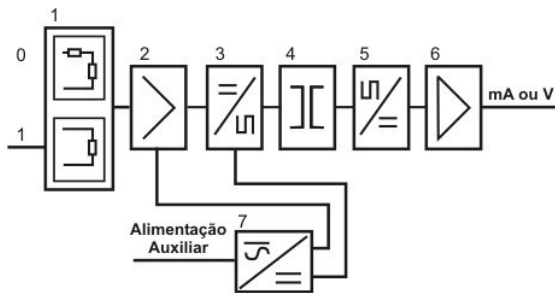
Characteristics

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

Appication

The galvanic separation is used for galvanic isolation between independent circuits of a same loop, with different electric potenciales, 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..60mV até 0..750V; (others on consult) |
| Current | 0...1mA até 0...50mA; 4...20mA (others on consult) |
| Input resistance | Voltage input: $U_E \leq 10V : 80k\Omega/V$ $U_E \geq 10V : 5k\Omega/V$ Current input: $\frac{60mV}{I (mA)}$ error limit 0,5% $\leq 1,00VA$ for error limit 0,25% |
| Overload | Current input: $\leq 0,15VA$ permanently: $1,5 \times U_{rtd} ; 2 \times I_{rtd}$ briefly $4 \times U_{rtd}/1s; 50 \times I_{rtd}/1s$ |
| Output | |
| Current | 0...20mA, 4...20mA, 0...10V (others on consult) |
| Signal limit | $\leq 1,5 \times I_{rtd}, U_{rtd}, 25V$ RC = infinite |
| Load limit | $R_c = \frac{15.000(mV)}{\text{max.output signal (mA)}} \Omega$ f.ex.: $R_c = 750\Omega$ for 20mA |
| Voltage | 0...10V ; $R_c \geq \frac{U_s}{20mA}$ |
| Residual ripple | $\leq 0,5\%$ (peak to peak) • |

Power supply:

85...265Vca e 90...300Vcc
20...60Vca/Vcc
consumption: 3W approx.

Influence magnitudes

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

Electrical test

| | |
|---------------|--|
| Test voltage: | $U_{ax} \geq 85V$: 2,5kV/1min ; 60Hz (for all circuits mutually). $U_{ax} \leq 60V$: 1,5kV/1min ; 60Hz (for all circuits mutually). |
| Pulse voltage | 5kV; 1,2/50 us; 0,5Ws |
| Peaks | 2,5kV; 1MHz; 400 pulsos / 1s |

Notes:

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

Construction and mounting

| Type | Case |
|-----------------------|---------------------------------------|
| Housing | Polyamide UL94 VO |
| Fastening | Surface mounting using DIN rail |
| Electrical connection | Terminals for pin shaped cable shoes. |
| Protection class | IP 40 no housing |
| (NBR 6146) | IP 20 at the connection terminals |
| Weight | $\pm 0,1$ 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 50

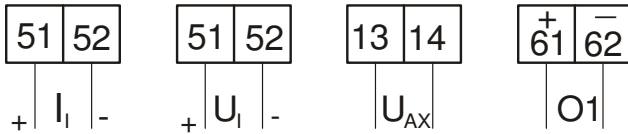
DATA SHEET - N00394

For direct voltage or current signals

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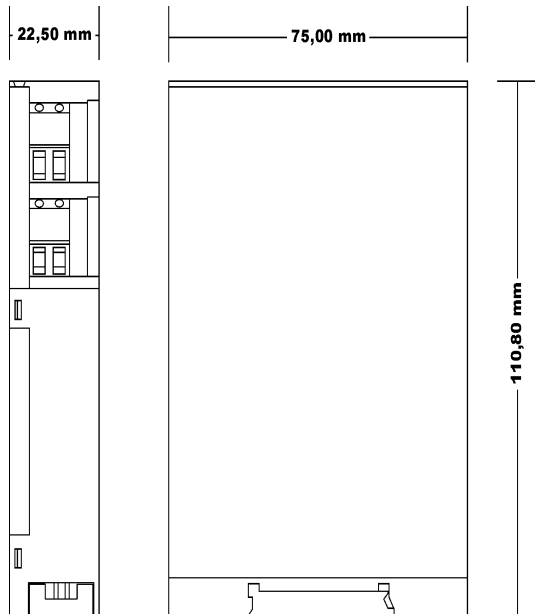
Electric connection



I_I, U_I = Input Current or Voltage
 U_{Ax} = Auxiliary power supply
 OI = Current or Voltage output

Dimensional Drawing

Dimensions in 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 voltage and current 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 mounting on DIN rail, use the snap-in device on the rear of the instrument.

The connections can be made with pin for shaped 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.

| | |
|---------------------------------------|-------------------------|
| Galvanic Isolator ETI 50 | DATA SHEET - N00394 |
| For direct voltage or current signals | Page 4/4 August 2003 |

Ordering information

| | Catalog number | | | | | | | | | |
|---|----------------|---|---|---|---|---|----|---|---|---|
| Transducer cc/cc e Galvanic Isolator ETI-50 | N | 0 | 0 | 3 | 9 | 4 | - | - | - | - |
| Measuring range | | | | | | | | | | |
| 0... 20mADC | | | | | | 1 | | | | |
| 4... 20mADC | | | | | | 2 | | | | |
| 0... 5VDC | | | | | | 3 | | | | |
| 0... 10VDC | | | | | | 4 | | | | |
| Others (between 0...1mA to a 0...20mADC) and (between 0... 60mV to a 750VDC) | | | | | | 0 | | | | |
| Auxiliary power supply | | | | | | | | | | |
| 20...60Vca/Vcc | | | | | | | 12 | | | |
| 85...265Vca e 90...300Vcc | | | | | | | 13 | | | |
| Output Signal | | | | | | | | | | |
| 0...20mADC | | | | | | | | 1 | | |
| 4...20mADC | | | | | | | | 2 | | |
| 0...10VDC | | | | | | | | 3 | | |
| Others | | | | | | | | 0 | | |
| Options | | | | | | | | | | |
| Error limit 0,25% | | | | | | | | | 1 | |
| Standard (Class 0,5%) | | | | | | | | | 5 | |
| Additional information | | | | | | | | | | |
| Standard | | | | | | | | | | 1 |
| Complement (Inform input signal) | | | | | | | | | | C |

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

Example:

Galvanic Isolator ETI-50 case

Measuring range 4...20mADC
 Auxiliary power supply 85...265Vca e 90...300Vcc
 Output Signal 4...20mADC
 Options Classe 0,5%
 Additional information Standard

Code number : N00394213151