



## RAYLEIGH INSTRUMENTS LIMITED

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## Self-powered current loop isolator

E&OE

DAT 511

### FEATURES

0÷20 mA isolated conversion  
No external supply required  
High isolation voltage: 3000 Vac  
Good accuracy and performance stability  
Conform to EMC standards - CE mark  
Suitable for DIN rail mounting  
Very thin case

### APPLICATIONS:

Isolation of normalized current signals in

- Process controls
- Automation systems
- Energy source management



### GENERAL INFORMATION

The DAT 511 is a passive galvanic isolator suitable for the isolation of normalized current signals. The input current, variable from 0 to 20 mA, is converted in an output current of the same value but keeping a galvanic isolation from the input circuit. The converter is a passive isolator: it means that the device employs the measurement signal to self-power and consequently it do not require any external power supply. To operate correctly the module requires only the four essential connections.

The device, conform to the 89/336/EEC directives on electromagnetic compatibility, is contained in a rugged plastic case, suitable for direct mounting on DIN rail, complying to the DIN 46277-1 and DIN 46277-3 standards.

### TECHNICAL SPECIFICATIONS ( Typical @ 25 °C and in the nominal conditions )

#### Input

Input signal range 0 to 20 mA, reverse polarity protected  
Maximum input current 50 mA

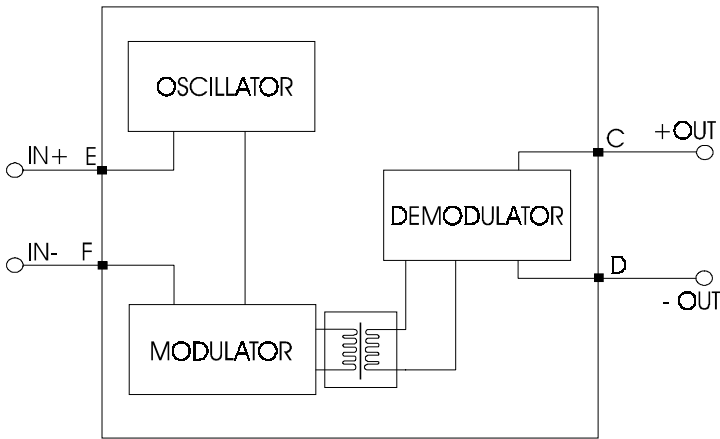
#### Output

Load resistance 0 to 700  $\Omega$  Max.  
Internal voltage drop Approx. 3 V

#### Performances

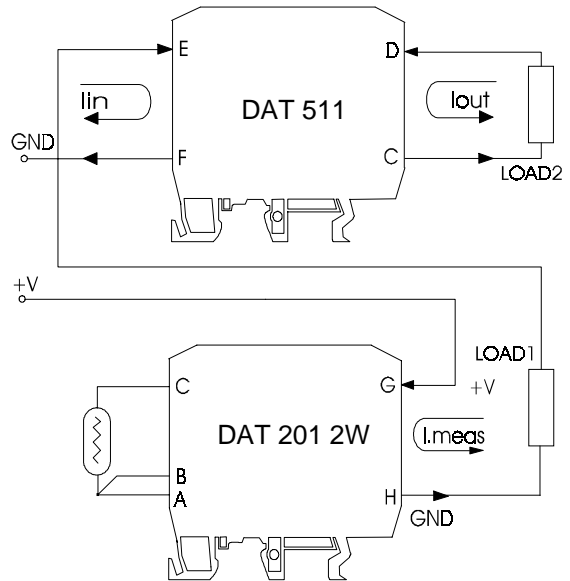
Transmission error  $\pm 0.25$  % of full scale  
Influence of load resistance  $\pm 0.085$  % of full scale / 100  $\Omega$   
Electromagnetic Compability According to EN50081-2 and EN50082-1  
Isolation voltage, input to output 3000 Vac 50 Hz 1 min.  
Response time (10% to 90% of f.s.) 20 ms  
Operating temperature 0 ÷ 55 °C  
Storage temperature - 40 ÷ 100 °C  
Relative humidity 0 ÷ 90 %  
Weight 60 g.

## FUNCTIONAL DIAGRAM



## APPLICATION EXAMPLE

E&OE



## OPERATING INSTRUCTIONS

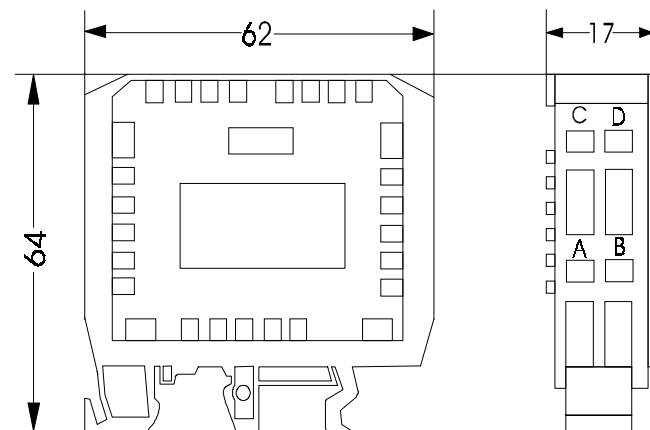
The DAT 511 start up procedure is extremely easy and fast. It is sufficient to connect the input signal between E (+) and F(-) terminals to the module and draw the output signal between C (+) and D (-) terminals. The DAT 511 is completely protected against polarity reversal of input signal but permitting, in spite of this, the input current flow. In this condition there is not any output signal.

On "application example" above illustrated it is shown one of the most DAT 511 applications: the 4 ÷ 20 mA signal coming from two wire current transmitter (in this case DAT 201 2W) is repeated by the loop isolator. In this manner, easy and cheap, it is possible to have two normalized and isolated signals as to employ, for example, to visualize the measured value of temperature and to supply a loop for the control of the same one.

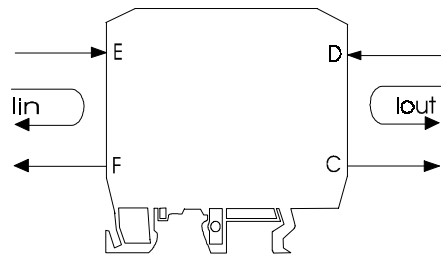
To further protect the device against electrostatic discharges which could be originated by its handling before the installation, it is supplied with an apposite transparent plastic cover which can be removed during the installation.

## PHISICAL DIMENSIONS

(all measures in mm.)



## WIRING DIAGRAM



## PIN ASSIGNMENT

A = NC	E = + IN
B = NC	F = - IN
C = + OUT	G = NC
D = - OUT	H = NC

## HOW TO ORDER:

DAT 511

RI06085