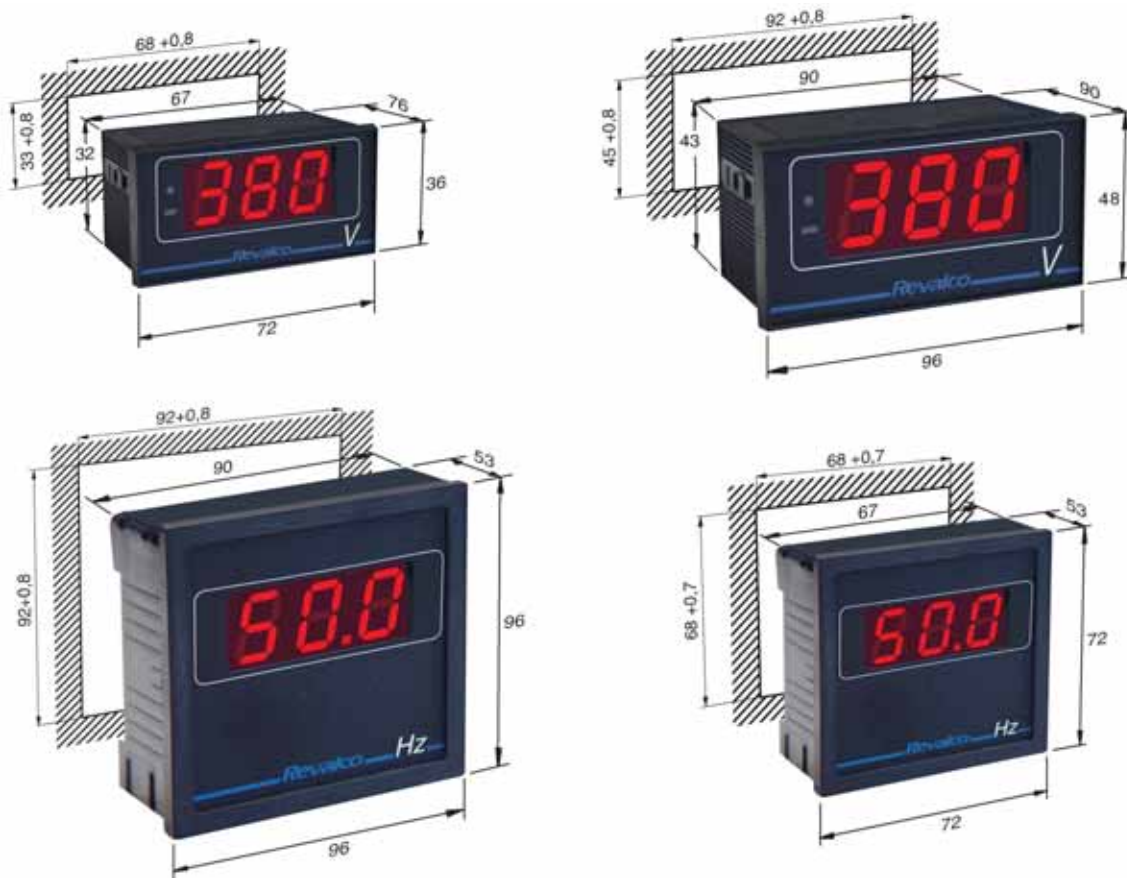


# DIGITAL SWITCHBOARD INSTRUMENTS



DIMENSIONS in mm



FAST FIXING SYSTEM

STANDARD FIXING SYSTEM



— Two fixing systems furnished together with the instruments

**STANDARDS**

- Revalco digital measuring instruments are manufactured according to CEI 13-6 - CEI 66-2 - CEI 66-3 and IEC 359 electrical standards. Whereas with regard to dimensional characteristics it is necessary to refer to the DIN 43700/43718 standards.

**TESTING VOLTAGE**

- The instruments are tested according to the CEI 13-6 standards with a 2KV voltage test at 50Hz for one minute between terminals, earth and auxiliary supply.

**PRECISION CLASS**

- The precision class is 0,5 +/-1 digit according to CEI 13-6 and must be referred to the maximum reading achievable (end scale value)

**ASSEMBLY POSITION**

- The functionality of the digital indicators is independent of the position assumed on the electrical panel.

**HOUSINGS**

- The degree of protection is IP52 for the inside of the instrument while the terminals have IP00 according to DIN 40050 and IEC 144 standards. The IP40 degree of protection can be reached on the terminals by using the special rear terminal covers.
- The housings are made up of self-extinguishing thermoplastic material according to UL94 standards, V-O classification, resistant to termites and mould.

**DISPLAY**

- These are made up of 14 mm height red leds on the types 2RID36/2RCD36 and 2RID72/2RCD72 while are 20 mm height on the types 2RID48/2RCD48 and 2RID96/2RCD96. The visualisation of the out scale is mentioned on the respective technical data.

**TERMINALS**

- These are made of brass of the terminal type in the 2RID72 and 2RID96 types, while they are of the faston type (6,35x0,8mm) in the 2RID36 and 2RID48 versions.

**OPERATING TEMPERATURE**

- The digital indicators satisfy the requisites of the IEC standards, paragraph 8.4.1 for which the functioning temperature should be 20°C +/-10°C; they can however function at a temperature ranging between -10 and +55°C with a variation of the class indicator included within +/-0,05 % / °C

**STORAGE TEMPERATURE**

- The storage temperature should range from -40 and +70°C.

**HUMIDITY**

- The instruments function with a maximum relative humidity of 85% without undergoing condensation, at a temperature of +35°C for a maximum of 60 days per year. The average annual value of relative humidity should not exceed 65% (DIN 40040 standards). The instruments in **tropicalised execution** can exceed the values mentioned above and function with a maximum relative humidity of 95% at a temperature of +35°C for a maximum of 30 days per year; and in this case the average annual value of relative humidity should not exceed 75%

**RESISTANCE TO VIBRATIONS**

- The digital indicators support vibrations on the 3 axes ranging from 3 and 0,35mm of intensity and with a frequency ranging between 5 and 60Hz (0,3/5g)

**FIXING**

- The instruments are suitable for fixing to the switchboard by means of two rods with screws which can be applied to the sides of the instrument.

**MULTISCALE FUNCTION**

- The ammeters for use with a C.T. or Shunts are arranged for selecting the different capacities, by adjusting the incorporated minidip. The voltmeter can select two different scales.
- The multiscale function has been specially designed for providing substantial advantages as follows:
  - **Reduction in warehouse investments.** It is in fact no longer necessary to stock a vast assortments of instruments with different scales.
  - **Reduction of storage space.** As a substantial assortment of instruments with varied capacities is not necessary, a considerable amount of space is saved.
  - **Reduced delivery time.** Without creating your own stock, goods are available from wholesalers agents or at Revalcos central premises.
  - **Rapid variation in the scale bottom.** The variation in the scale can also be carried out by non specialized personnel as it is necessary to pay a minimum amount of attention during this operation and to ensure that the various components are correctly positioned.

**POWER SUPPLY**

- AC auxiliary power supplies can be the following: 24V – 110V – 230V (standard)
- DC auxiliary power supplies can be the following: 12VDC (range from 10 to 15VDC)  
24VDC (range from 20 to 28VDC)  
48VDC (range from 40 to 60VDC)  
110VDC (range from 90 to 150VDC)

AC AMMETERS AND VOLTMETERS



2RID36



2RID48



2RID72



2RID96

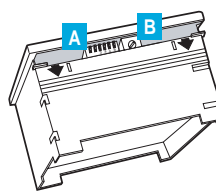
- **MAXIMUM READING** 999
- **BURDEN** Ammeters 0,5VA Voltmeters 1VA
- **STANDARD POWER SUPPLY** galvanically insulated, at 230V +/-10% (different power supply on request)
- **OPERATING FREQUENCY** 50/60 Hz
- **AMMETER CAPACITIES (5A STANDARD)** 15A-25A-40A-60A-99.9A-150A-250A-400A-600A-999A.  
The instruments are predisposed for the selection of the above capacities, using the incorporated minidip. It is necessary to connect the CT .../5A correspondents to the chosen end scale value
- **Secondary 1A on request**
- **VOLTMETER CAPACITIES** 99.9V-600V  
The instruments are predisposed for the selection of the above capacities, using the incorporated minidip
- **Different capacities can be carried out on request**
- **EXAMPLES WHEN ORDERING**  
2RID36.A multiscale ammeter (36x72mm) power supply 230V      2RID48.A 110 multiscale ammeter (48x96mm) power supply 110V  
2RID72.V multiscale voltmeter (72x72mm) power supply 230V      2RID96.V 24C multiscale voltmeter (96x96mm) power supply 24VDC
- **WEIGHT (kg):** 2RID36 (0,21)      2RID48 (0,28)      2RID72 (0,24)      2RID96 (0,30)

END SCALE ADJUSTMENT

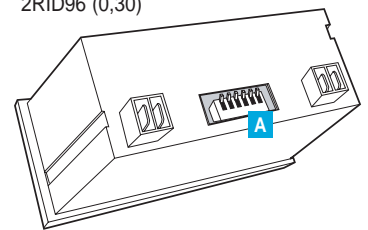
To have to the (A) minidip as shown in the figure. The potentiometer relating to the end scale value (B) have already been adjusted by the manufacturer. They should therefore only be used in cases when it is necessary to modify the calibration ( $\pm 5\%$ ). Due the fact that the instruments have a automatic zero, the correspondent potentiometer is not present.



It is important that, during this operation, the instrument is not connected.

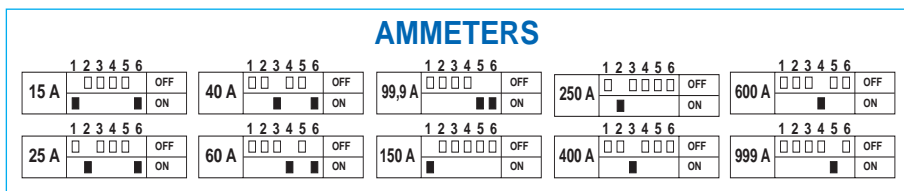


2RID72 / 2RID96

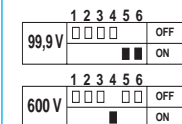


2RID36 / 2RID48

- In order to obtain the desired scale, shift the components of the minidip as shown below



VOLTMETERS

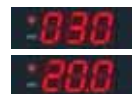


NOTE: C.T. (.../5A or .../1A) should have a primary which is equal to the value of the predisposed capacity

OUT OF SCALE 2RID72 / 2RID36

The out scale indication referred to the maximum value of 999 or 99,9 is displayed by the illumination of the red point on the front of the instruments, and the display will show the exceeded value.

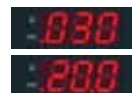
- Example: end scale 999A, input value 1030A, out scale display
- end scale 99,9V, input value 120V, out scale display



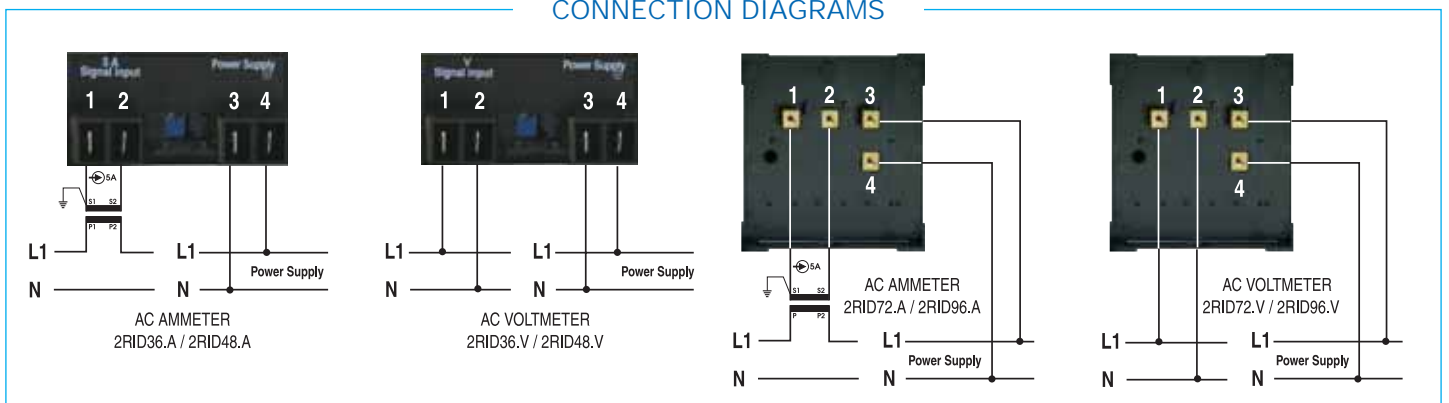
OUT OF SCALE 2RID48 / 2RID96

The out scale indication referred to the maximum value of 999 or 99,9 is displayed by the illumination of the red point on display of the instruments, and the display will show the exceeded value.

- Example: end scale 999A, input value 1030A, out scale display
- end scale 99,9V, input value 120V, out scale display



CONNECTION DIAGRAMS



## DC AMMETERS AND VOLTMETERS



**2RCD36**

**2RCD48**

**2RCD72**

**2RCD96**

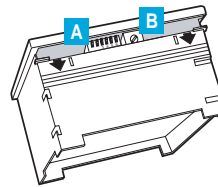
- **MAXIMUM READING** 999
  - **BURDEN** Ammeters 0,5VA Voltmeters 1VA
  - **STANDARD POWER SUPPLY** galvanically insulated, at 230V +/-10% (different power supply on request)
  - **AMMETER CAPACITIES (60mV STANDARD)** 15A-25A-40A-60A-99.9A-150A-250A-400A-600A-999A.  
The instruments are predisposed for the selection of the above capacities, using the incorporated minidip. It is necessary to connect the Shunt .../ 60mV correspondents to the chosen end scale value
  - **VOLTMETER CAPACITIES** 99.9V-600V  
The instruments are predisposed for the selection of the above capacities, using the incorporated minidip
  - **Different capacities can be carried out on request**
  - **EXAMPLES WHEN ORDERING**
  - **WEIGHT (kg):**
- |   |  |   |               |
|---|--|---|---------------|
| 2RCD36.A multiscale ammeter (36x72mm) power supply 230V   | 2RCD 48.A 110 multiscale ammeter (48x96mm) power supply 110V | 2RCD 96.A 24C multiscale voltmeter (96x96mm) power supply 24VDC |               |
| 2RCD72.V multiscale voltmeter (72x72mm) power supply 230V | 2RCD48 (0,28)  | 2RCD72 (0,24)   | 2RCD96 (0,30) |
| 2RCD36 (0,21)   |  |   |               |

### END SCALE ADJUSTMENT

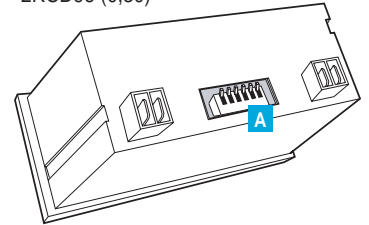
To have to the (A) minidip as shown in the figure. The potentiometer relating to the end scale value (B) have already been adjusted by the manufacturer. They should therefore only be used in cases when it is necessary to modify the calibration ( $\pm 5\%$ ). Due the fact that the instruments have a automatic zero, the correspondent potentiometer is not present.



**It is important that, during this operation, the instrument is not connected.**



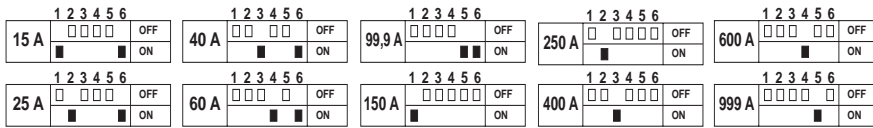
**2RCD72 / 2RCD96**



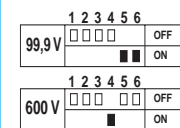
**2RCD36 / 2RCD48**

- In order to obtain the desired scale, shift the components of the minidip as shown below

### AMMETERS



### VOLTMETERS



**NOTE: Shunts. (.../ 60mV) should have a primary which is equal to the value of the predisposed capacity**

### OUT OF SCALE 2RCD72 / 2RCD36

The out scale indication referred to the maximum value of 999 or 99,9 is displayed by the illumination of the red point on the front of the instruments, and the display will show the exceeded value.

Example: end scale 999A, input value 1030A, out scale display   
end scale 99,9V, input value 120V, out scale display

### OUT OF SCALE 2RCD48 / 2RCD96

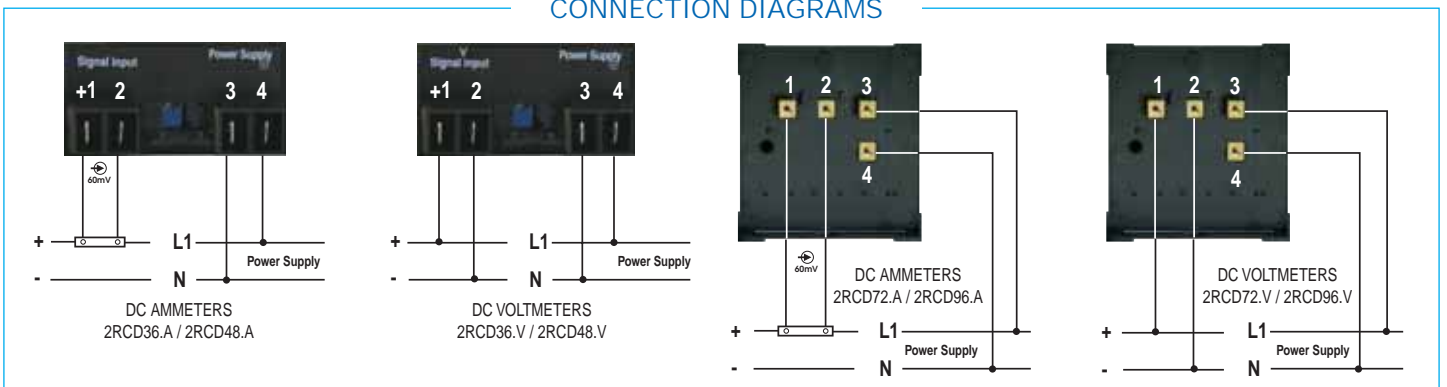
The out scale indication referred to the maximum value of 999 or 99,9 is displayed by the illumination of the red point on display of the instruments, and the display will show the exceeded value.

Example: end scale 999A, input value 1030A, out scale display   
end scale 99,9V, input value 120V, out scale display

### POLARITY INVERSION

If the polarity of the signal input is inverted, the "minus" simbol on the ammeters lights-on while on the voltmeters the display doesn't change remaining fixed on "000" value.

## CONNECTION DIAGRAMS



## AC AMMETERS, DIRECT INPUT 25A



**2RID36.25A**



**2RID48.25A**



**2RID72.25A**



**2RID96.25A**

- **BURDEN**
- **STANDARD POWER SUPPLY**
- **OPERATING FREQUENCY**
- **CAPACITY**

0,5VA  
galvanically insulated, at 230V +/-10% (different power supply on request)  
50/60 Hz  
25A

■ **EXAMPLES WHEN ORDERING**

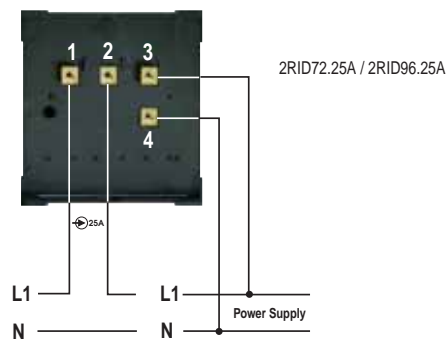
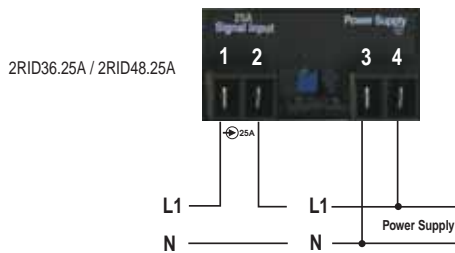
2RID36.25A digital ammeter (36x72mm) power supply 230V  
2RID72.25A 24 digital ammeter (72x72mm) power supply 24VAC

2RID48.25A 110 digital ammeter (48x96mm) power supply 110VAC  
2RID96.25A 24C digital ammeter (96x96mm) power supply 24VDC

■ **WEIGHT (kg):**

2RID36.25A (0,23) 2RID48.25A (0,30) 2RID72.25A (0,26) 2RID96.25A (0,32)

### CONNECTION DIAGRAMS



## FREQUENCYMETER



**2RFD36**



**2RFD48**



**2RFD72**



**2RFD96**

- **BURDEN**
- **STANDARD POWER SUPPLY**
- **STANDARD CAPACITIES**

0,5VA  
galvanically insulated, at 230V +/-10%  
(different power supply on request)  
40...80Hz input voltage from 60V to 600V

■ **EXAMPLES WHEN ORDERING**

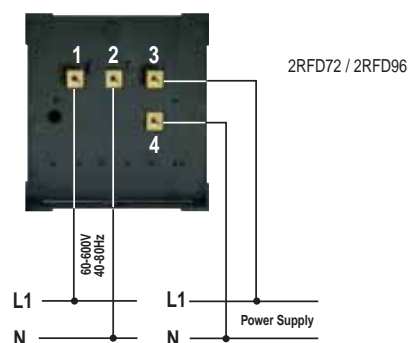
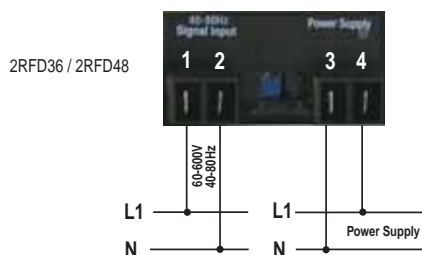
2RFD36 frequencymeter (36x72mm) power supply 230V  
2RFD72 frequencymeter (72x72mm) power supply 230V

2RFD48 110 frequencymeter (48x96mm) power supply 110VAC  
2RFD96 24C frequencymeter (96x96mm) power supply 24VDC

■ **WEIGHT (kg):**

2RFD36 (0,23) 2RFD48 (0,30) 2RFD72 (0,26) 2RFD96 (0,32)

### CONNECTION DIAGRAMS



## AC / DC DOUBLE MULTISCALE INSTRUMENTS

These instruments make it possible to read the voltage and the current at the same time. As the ammeter and voltmeter are in a single housing there is a considerable saving from an economical point of view as well as space on the electrical switchboard.



**2RID96.VA / 2RCD96.VA**

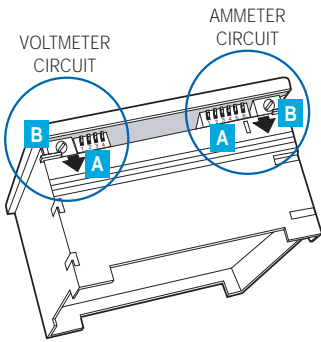
### ALTERNATED CURRENT 2RID96.VA

### DIRECT CURRENT 2RCD96.VA

<ul style="list-style-type: none"> <li>■ <b>MAXIMUM READING</b> 999</li> <li>■ <b>BURDEN</b> of the Ammeter circuit 0,5VA of the Voltmeter circuit 1VA</li> <li>■ <b>DISPLAY</b> 2 displays, 3 red digit</li> <li>■ <b>STANDARD POWER SUPPLY</b> galvanically insulated, at 230V +/-10% (different power supply on request)</li> <li>■ <b>Different capacities and secondaries can be carried out on request</b></li> <li>■ <b>VOLTMETER CAPACITIES</b> 99.9V-600V The instruments are designed for selecting the above-mentioned capacities by adjusting the incorporated minidip.</li> <li>■ <b>AMMETER CAPACITIES</b> <b>5A STANDARD</b> 15A-25A-40A-60A-99.9A-150A-250A-400A-600A-999A. The instruments are designed for selecting the above-mentioned capacities by adjusting the incorporated minidip. It is necessary to use the C.T. .../5A which corresponds to the previously chosen scale bottom</li> <li>■ <b>OPERATING FREQUENCY</b> 50/60 Hz</li> <li>■ <b>EXAMPLES WHEN ORDERING</b> voltmeter/ammeter, Power supply 230V 2RID96.VA voltmeter/ammeter, Power supply 110V 2RID96.VA 110</li> <li>■ <b>WEIGHT (kg):</b> 0,37</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>MAXIMUM READING</b> 999</li> <li>■ <b>BURDEN</b> of the Ammeter circuit 0,5VA of the Voltmeter circuit 1VA</li> <li>■ <b>DISPLAY</b> 2 displays, 3 red digit</li> <li>■ <b>STANDARD POWER SUPPLY</b> galvanically insulated, at 230V +/-10% (different power supply on request)</li> <li>■ <b>Different capacities and secondaries can be carried out on request</b></li> <li>■ <b>VOLTMETER CAPACITIES</b> 99.9V-600V The instruments are designed for selecting the above-mentioned capacities by adjusting the incorporated minidip.</li> <li>■ <b>AMMETER CAPACITIES</b> <b>60mV STANDARD</b> 15A-25A-40A-60A-99.9A-150A-250A-400A-600A-999A. The instruments are designed for selecting the above-mentioned capacities by adjusting the incorporated minidip. It is necessary to use the Shunt .../60mV which corresponds to the previously chosen scale bottom</li> <li>■ <b>OPERATING FREQUENCY</b> 50/60 Hz</li> <li>■ <b>EXAMPLES WHEN ORDERING</b> voltmeter/ammeter, Power supply 230V 2RID96.VA voltmeter/ammeter, Power supply 110V 2RID96.VA 110</li> <li>■ <b>WEIGHT (kg):</b> 0,37</li> </ul>
--	---

#### END SCALE ADJUSTMENT

To have to the (A) minidip as shown in the figure. The potentiometer relating to the end scale value (B) have already been adjusted by the manufacturer. They should therefore only be used in cases when it is necessary to modify the calibration ( $\pm 5\%$ ). Due the fact that the instruments have a automatic zero, the correspondent potentiometer is not present.



**It is important that, during this operation, the instrument is not connected.**

■ In order to obtain the desired scale, shift the components of the minidip as shown below

AMMETERS					VOLTMETERS			
15 A	40 A	99,9 A	250 A	600 A	99,9 V			
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4			
OFF ON	OFF ON	OFF ON	OFF ON	OFF ON	OFF ON			
25 A	60 A	150 A	400 A	999 A	600 V			
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4			
OFF ON	OFF ON	OFF ON	OFF ON	OFF ON	OFF ON			



NOTE: for type **2RID96.VA**, C.T. (.../5A or .../1A) should have a primary which is equal to the value of the predisposed capacity  
NOTE: for type **2RCD96.VA**, Shunts (.../60mV) should have a primary which is equal to the value of the predisposed capacity

#### OUT OF SCALE

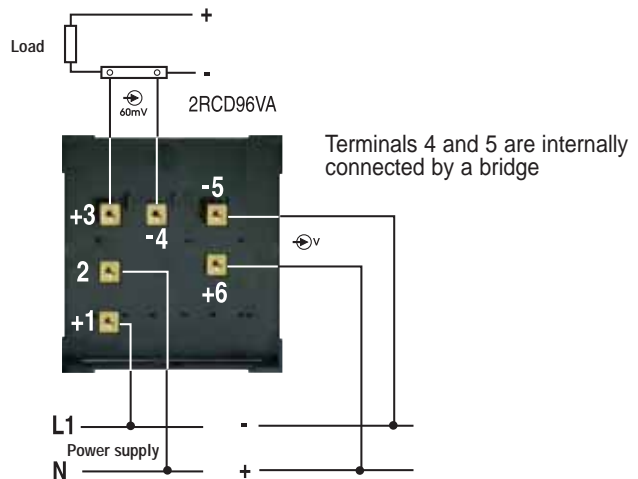
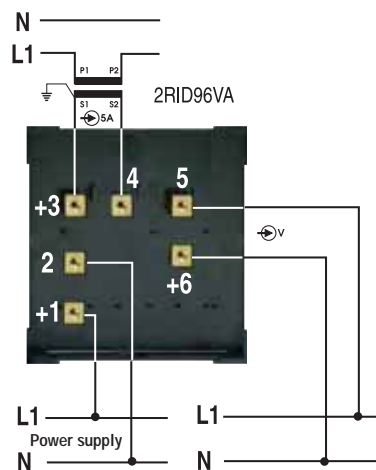
The out scale indication referred to the maximum value of 999 or 99,9 is displayed by the illumination of the downer red point on the front of the instruments, and the display will show the exceeded value.

Example: end scale 999A, input value 1030A, out scale display   
end scale 99,9V, input value 120V, out scale display

#### POLARITY INVERSION

If the polarity of the signal input is inverted, the upper red led on the ammeters lights-on while on the voltmeters the display doesn't change remaining fixed on "000" value.

### CONNECTION DIAGRAMS



## TEMPERATURE INDICATORS

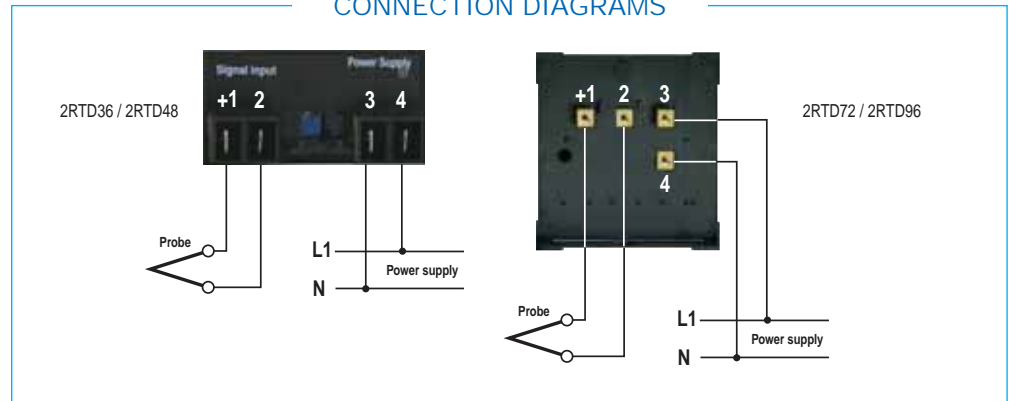


### 2RTD72 - 2RTD96


### 2RTD36 - 2RTD48

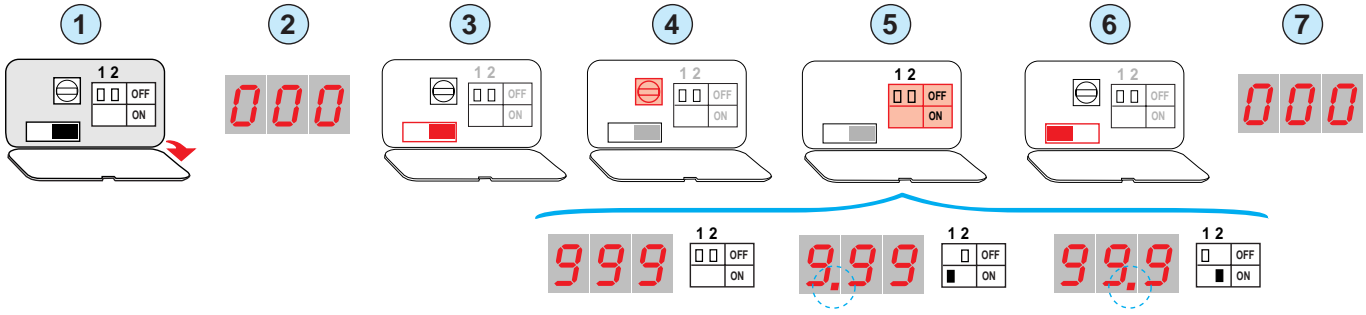
- The instruments make it possible to read the  $\Delta T$  temperature by means of a thermocouple from 0 to 999°C. The potentiometer is incorporated and are provided with a cold compensation.
- **BURDEN** 0,5VA
- **STANDARD POWER SUPPLY** galvanically insulated, at 230V +/-10% (different power supply on request)
- **OPERATING FREQUENCY** 50/60 Hz
- **When ordering indicate the used thermocouple type (J, K, FeCo etc.)**
- **EXAMPLES WHEN ORDERING**
  - 2RTD72 500°C, J temperature indicator, power supply 230V, end scale value 500°C, probe J
  - 2RTD96 24C 300°C, K temperature indicator, power supply 24VDC, end scale value 300°C, probe K
  - 2RTD48 24C 800°C FeCo temperature indicator, power supply 24VDC, end scale value 800°C, probe FeCo
- **MEDIUM WEIGHT (kg):** 0,30

### CONNECTION DIAGRAMS



**END SCALE AND DECIMAL POINT ADJUSTMENT WITH SIMULATION OF THE INPUT SIGNAL**

- 1) Open the back door with appropriate screwdriver
- 2) Power the instruments, after few seconds the display will show 000 (automatic zero)
- 3) Move the micro switch on the right for to enter in the **signal input simulation** phase (example 5mA)
- 4) Turn the trimmer until the required end scale value is obtained (example: 225 with simulated input 5mA - **the particularity of this instruments is that it is not necessary any effective signal input**)
- 5) Chose the position of the decimal point by the minidip.
  - With the two minidips in OFF position, no decimal numbers are chosen
  - With dip n°1 in ON position, two decimal numbers are chosen
  - With dip n°2 in ON position, one decimal number is chosen
- 6) Return the microswitch on the left to exit from the signal input simulation phase
- 7)  The display will shows 000 but the preimposed end scale value is memorised (225 = 5mA)



- **ADJUSTABLE END SCALE**
- **DECIMAL POINT**
- **BURDEN**
- **STANDARD POWER SUPPLY**  
galvanically insulated
- **INPUT SIGNAL**  
to specify when ordering
- **SAMPLEMENT FREQUENCY**
- **WEIGHT (kg):**

	DIRECT VOLTAGE	DIRECT CURRENT
	<b>2RCTD36 / 2RCTD48</b>	
	from 10% to 100% end scale (999) Adjustable	
	2VA	1,5VA
	230V +/-10% (different power supply on request)	
	1V - 10V - 100V - 500V	1mA - 5mA - 10mA - 20mA - 4/20mA
	one every second	
	0,20	0,27

**COMPOSITION OF THE CODE AND EXAMPLES WHEN ORDERING**

- When ordering it is necessary to indicate: instrument type, power supply, signal input and measuring unit
- 1 - Instrument type: 2RCTD36 (36x72) or 2RCTD48 (48x96)
- 2 - Power supply: 230V - 110V - 24V AC +/-10%, 50/60 Hz      110V - 48V - 24V - 12V DC
- 3 - Signal input: 1mA - 5mA - 10mA - 20mA - 4/20mA (means the direct current indicator)  
1V - 10V - 100V - 500V ( means the direct voltage indicator)
- 4 - Measuring unit: A, kA, V, kV, Hz, °C, RPM, %, kg, kW, m/min, bar, m/sec, l/sec etc..

**EXAMPLE:**


2RCTD36 110 10V m/min      This example means an indicator in direct voltage 36x72mm with signal input 10VDC, power supply 110VAC and the measuring unit in meter per minute. The end scale value is selected by the final use.

2RCTD48 110C 4/20mA °C      This example means an indicator in direct current 48x96mm with signal input 4/20mADC, power supply 110VDC and the measuring unit in centigrad degrees. The end scale value is selected by the final use.


**EXAMPLES OF ADHESIVE MEASURING UNIT APPLIABLE ON THE FRONT OF THE INSTRUMENT**



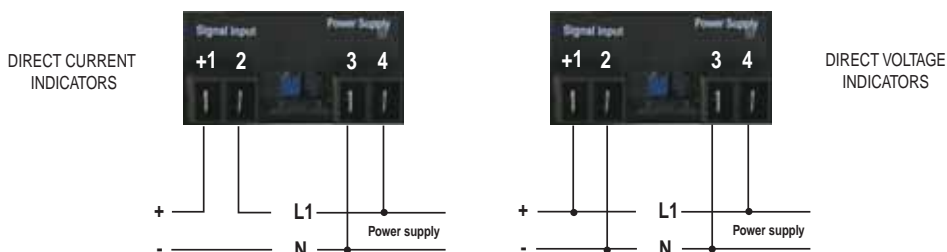
**OUT OF SCALE**

The out scale indication referred to the maximum value of 999 is displayed by the turn-off the display and by a illumination of the "I" symbol  
Example: end scale 999A, input value 1030A, out scale display 

**POLARITY INVERSION**

If the polarity of the signal input is inverted, the "minus" symbol  lights-on

**CONNECTION DIAGRAMS**





2RCTD36



2RCTD48



2RCTD72 - 2RCTD96

**2RCTD36.A - 2RCTD48.A - 2RCTD72.A - 2RCTD96.A AC instruments**  
**2RCTD36.D - 2RCTD48.D - 2RCTD72.D - 2RCTD96.D DC instruments**

This instruments are calibrated in the factory with the technical data indicated by the customer

- BURDEN** Ammeters 1,5VA - Voltmeters 2VA
- STANDARD POWER SUPPLY** galvanically insulated 230V +/-10% (different power supply on request)
- ⚠ When ordering indicate the end scale value, measuring unit, signal input and power supply** (this instruments have a fixed calibration, made by the manufacturer)
- WEIGHT (kg):** RCTD36 (0,21) RCTD48 (0,28) RCTD72 (0,24) RCTD96 (0,30)

**COMPOSITION OF THE CODE AND EXAMPLES WHEN ORDERING**

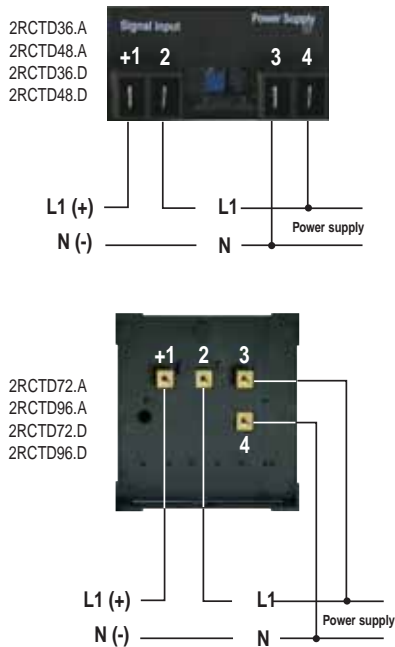
- When ordering indicate the end scale value, measuring unit, signal input and power supply
- 1 - Instrument type: 2RCTD36.A (36x72), 2RCTD48.A (48x96), 2RCTD72.A (72x72) or 2RCTD96.A (96x96)
- 2 - Power supply: 230V - 110V - 24VAC +/-10%, 50/60 Hz 110V - 48V - 24V - 12VDC
- 3 - Signal input: every, in current or voltage, in AC or DC to chose between:  
 alternated current from 1A to 5A  
 direct current 1mA, 5mA, 10mA, 20mA, 4/20mA, 5A  
 alternated voltage from 1V to 600V  
 direct voltage from 60mV to 600V
- 4 - End scale and Measuring unit: A, kA, V, kV, Hz, °C, RPM, %, kg, kW, m/min, bar, m/sec, l/sec etc..

**EXAMPLE:**

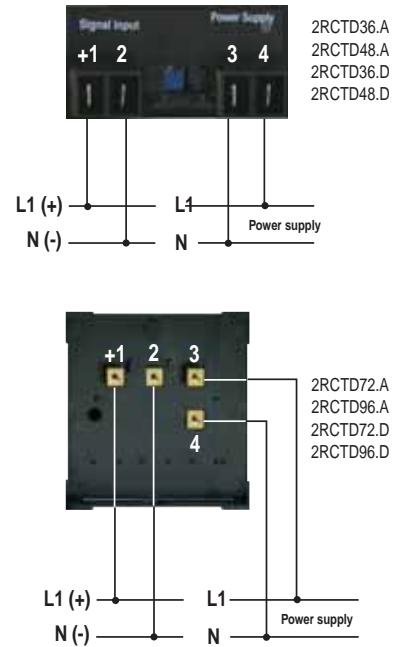
<u>2RCTD36.A</u>	<u>125V</u>	<u>600m/min</u>	This example means an indicator in alternated voltage 36x72mm with signal input 125VAC, power supply 230VAC, end scale value 600 m/min	
1	2	3	4	
<u>2RCTD48.D</u>	<u>24C</u>	<u>75V</u>	<u>300W</u>	This example means an indicator in direct voltage 48x96 mm with signal input 75VDC, power supply 24VDC, end scale value 300 W
1	2	3	4	
<u>2RCTD96.D</u>	<u>48C</u>	<u>28mA</u>	<u>200l/h</u>	This example means an indicator in direct current 96x96 mm with signal input 28mA, power supply 48VDC, end scale value 200 l/h
1	2	3	4	

CONNECTION DIAGRAMS


AC / DC CURRENT INDICATORS

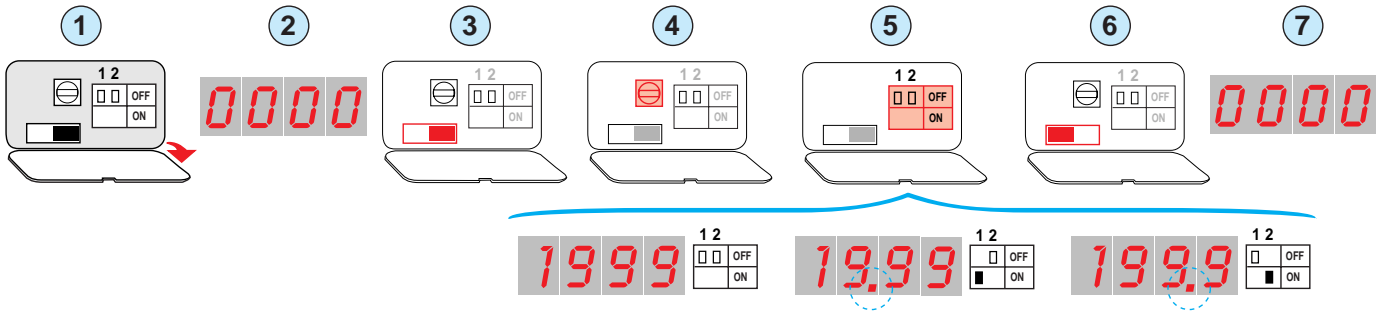


AC / DC VOLTAGE INDICATORS



**END SCALE AND DECIMAL POINT ADJUSTMENT WITH SIMULATION OF THE INPUT SIGNAL**

- 1) Open the back door with appropriate screwdriver
- 2) Power the instruments, after few seconds the display will show 0000 (automatic zero)
- 3) Move the micro switch on the right for to enter in the **signal input simulation** phase (example 5mA)
- 4) Turn the trimmer until the required end scale value is obtained (example: 1225 with simulated input 5mA - **the particularity of this instruments is that it is not necessary any effective signal input** )
- 5) Chose the position of the decimal point by the minidip.
  - With the two minidips in OFF position, no decimal numbers are chosen
  - With dip n°1 in ON position, two decimal numbers are chosen
  - With dip n°2 in ON position, one decimal number is chosen
- 6) Return the microswitch on the left to exit from the signal input simulation phase
- 7)  The display will shows 0000 but the preimposed end scale value is memorised (1225 = 5mA)



- ADJUSTABLE END SCALE
- DECIMAL POINT
- BURDEN
- STANDARD POWER SUPPLY galvanically insulated
- OPERATING FREQUENCY
- SIGNAL INPUT
- SAMPLEMENT FREQUENCY
- EXAMPLES WHEN ORDERING
  - Ammeter, power supply 230V
  - Ammeter, power supply 110VDC
- WEIGHT (kg):

**ALTERNATED CURRENT  
2RID36.1 / 2RID48.1**

**DIRECT CURRENT  
2RCD36.1 / 2RCD48.1**

from 10% to 100% end scale (1999)	Adjustable
1,5VA	
230V +/-10% (different power supply on request)	
50/60 Hz	
5A	60mV
one every second	
2RID36.1	2RCD36.1
2RID36.1 110C	2RCD36.1 110C
0,21 / 0,28	0,21 / 0,28

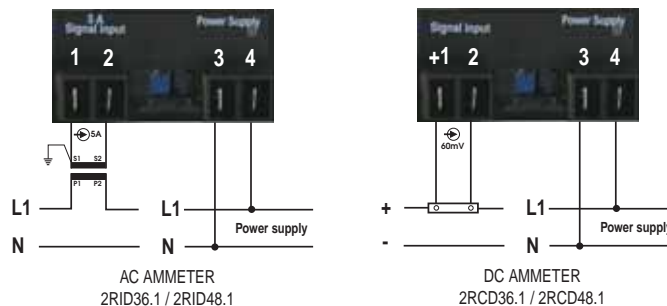
**OUT OF SCALE**

The out scale indication referred to the maximum value of 1999 is displayed by the turn-off the display and by a illumination of the "I" symbol  
 Example: end scale 1999A, input value 2030A, out scale display


**POLARITY INVERSION**

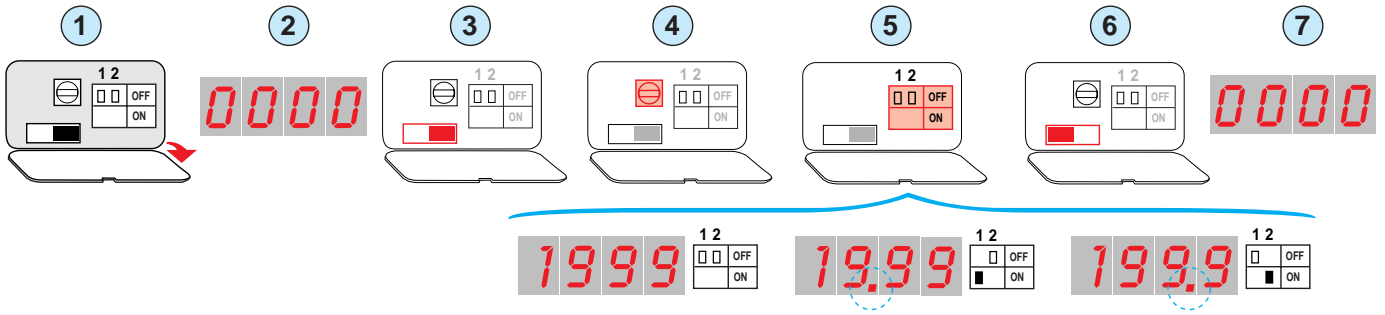
If the polarity of the signal input is inverted, the "minus" symbol lights-on

**CONNECTION DIAGRAMS**



**END SCALE AND DECIMAL POINT ADJUSTMENT WITH SIMULATION OF THE INPUT SIGNAL**

- 1) Open the back door with appropriate screwdriver
- 2) Power the instruments, after few seconds the display will show 0000 (automatic zero)
- 3) Move the micro switch on the right for to enter in the **signal input simulation** phase (example 5mA)
- 4) Turn the trimmer until the required end scale value is obtained (example: 1225 with simulated input 5mA - **the particularity of this instruments is that it is not necessary any effective signal input**)
- 5) Chose the position of the decimal point by the minidip.
  - With the two minidips in OFF position, no decimal numbers are chosen
  - With dip n°1 in ON position, two decimal numbers are chosen
  - With dip n°2 in ON position, one decimal number is chosen
- 6) Return the microswitch on the left to exit from the signal input simulation phase
- 7)  The display will shows 0000 but the preimposed end scale value is memorised (1225 = 5mA)



- **ADJUSTABLE END SCALE**
- **DECIMAL POINT**
- **BURDEN**
- **STANDARD POWER SUPPLY**  
galvanically insulated
- **SIGNAL INPUT**  
to specify when ordering
- **SAMPLEMENT FREQUENCY**
- **WEIGHT (kg):**

	DIRECT VOLTAGE	DIRECT CURRENT
	<b>2RCTD36.1 / 2RCTD48.1</b>	
	from 10% to 100% end scale (1999) Adjustable	
	2VA	1,5VA
	230V +/-10% (different power supply on request)	
	1V - 10V - 100V - 500V	1mA - 5mA - 10mA - 20mA - 4/20mA
	0,20	0,27

**COMPOSITION OF THE CODE AND EXAMPLES WHEN ORDERING**

- When ordering it is necessary to indicate: instrument type, power supply, signal input and measuring unit
- 1 - Instrument type: 2RCTD36.1 (36x72) or 2RCTD48.1 (48x96)
- 2 - Power supply: 230V - 110V - 24VAC +/-10%, 50/60 Hz 110V - 48V - 24V - 12VDC
- 3 - Signal input: 1mA - 5mA - 10mA - 20mA - 4/20mA (means the direct current indicator)  
1V - 10V - 100V - 500V (means the direct voltage indicator)
- 4 - Measuring unit: A, kA, V, kV, Hz, °C, RPM, %, kg, kW, m/min, bar, m/sec, l/sec etc..

**EXAMPLE:**


2RCTD36.1 110 10V m/min This example means an indicator in direct voltage 36x72mm with signal input 10VDC, power supply 110VAC and the measuring unit in meter per minute. The end scale value is selected by the final use.

2RCTD48.1 110C 4/20mA °C This example means an indicator in direct current 48x96mm with signal input 4/20mADC, power supply 110VDC and the measuring unit in centigrad degrees. The end scale value is selected by the final use.


**EXAMPLES OF ADHESIVE MEASURING UNIT APPLIABLE ON THE FRONT OF THE INSTRUMENT**



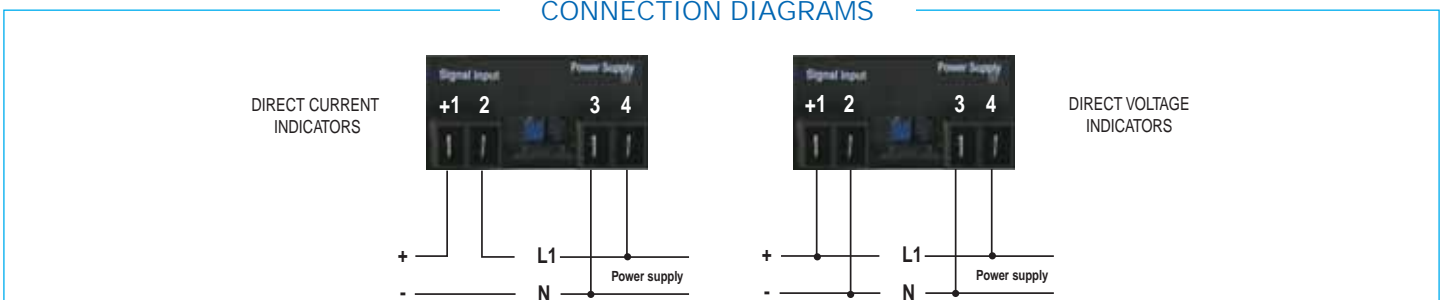
**OUT OF SCALE**

The out scale indication referred to the maximum value of 1999 is displayed by the turn-off the display and by a illumination of the "I" symbol  
Example: end scale 1999A, input value 2030A, out scale display 

**POLARITY INVERSION**

If the polarity of the signal input is inverted, the "minus" symbol  lights-on

**CONNECTION DIAGRAMS**





2RCTD36



2RCTD48

**2RCTD36.1A - 2RCTD48.1A AC instruments**  
**2RCTD36.1D - 2RCTD48.1D DC instruments**

This instruments are calibrated in the factory with the technical data indicated by the customer

- **BURDEN** Ammeters 1,5VA - Voltmeters 2VA
- **STANDARD POWER SUPPLY** galvanically insulated 230V +/-10% (different power supply on request)

⚠ **When ordering indicate the end scale value, measuring unit, signal input and power supply** (this instruments have a fixed calibration, made by the manufacturer)

■ **WEIGHT (kg):** 2RCTD36.1A (0,21) 2RCTD48.1A (0,28)

**COMPOSITION OF THE CODE AND EXAMPLES WHEN ORDERING**

■ When ordering indicate the end scale value, measuring unit, signal input and power supply

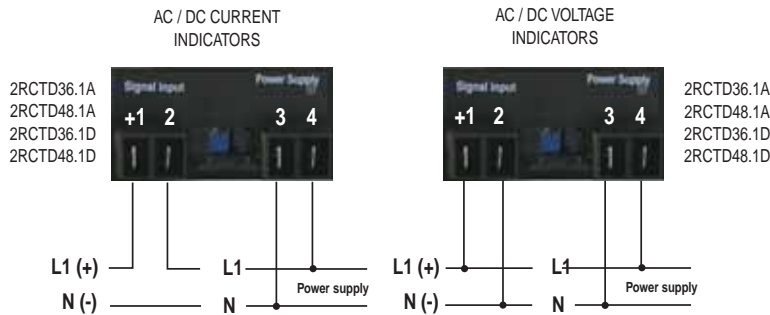
- 1 - Instrument type: 2RCTD36.A (36x72) or 2RCTD48.A (48x96)
- 2 - Power supply: 230V - 110V - 24VAC +/-10%, 50/60 Hz 110V - 48V - 24V - 12VDC
- 3 - Signal input: every, in current or voltage, in AC or DC to chose between:  
 alternated current from 1A to 5A  
 direct current 1mA, 5mA, 10mA, 20mA, 4/20mA, 5A  
 alternated voltage from 1V to 600V  
 direct voltage from 60mV to 600V
- 4 - End scale and Measuring unit: A, kA, V, kV, Hz, °C, RPM, %, kg, kW, m/min, bar, m/sec, l/sec etc..

■ **EXAMPLE:**


2RCTD36.1A 125V 600m/min This example means an indicator in alternated voltage 36x72mm with  
 1 2 3 4 signal input 125VAC, power supply 230VAC, end scale value 600 m/min

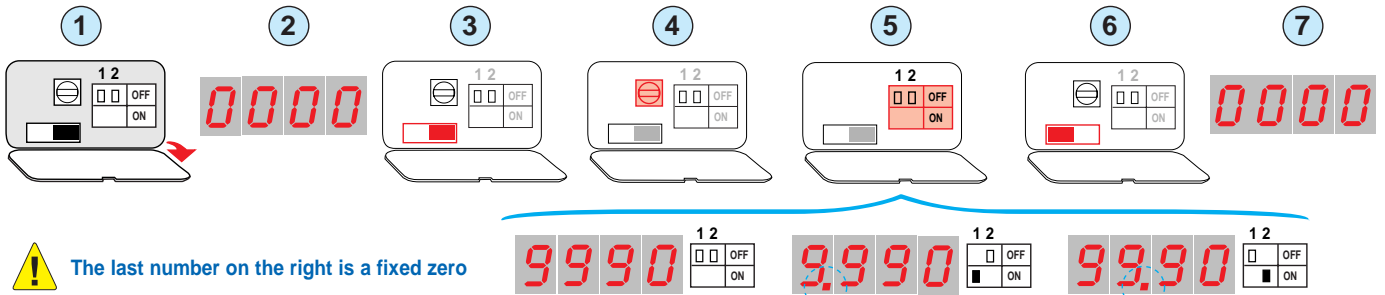
2RCTD48.1D 24C 75V 300W This example means an indicator in direct voltage 48x96 mm with  
 1 2 3 4 signal input 75VDC, power supply 24VDC, end scale value 300 W

**CONNECTION DIAGRAMS**



**END SCALE AND DECIMAL POINT ADJUSTMENT WITH SIMULATION OF THE INPUT SIGNAL**

- 1) Open the back door with appropriate screwdriver
- 2) Power the instruments, after few seconds the display will show 0000 (automatic zero)
- 3) Move the micro switch on the right for to enter in the **signal input simulation** phase (example 5A)
- 4) Turn the trimmer until the required end scale value is obtained (example: 3450 with simulated input 5A - **the particularity of this instruments is that it is not necessary any effective signal input**)
- 5) Chose the position of the decimal point by the minidip.
  - With the two minidips in OFF position, no decimal numbers are chosen
  - With dip n°1 in ON position, two decimal numbers are chosen
  - With dip n°2 in ON position, one decimal number is chosen
- 6) Return the microswitch on the left to exit from the signal input simulation phase
- 7)  The display will shows 0000 but the preimposed end scale value is memorised (3450 = 5A)



- ADJUSTABLE END SCALE
- DECIMAL POINT
- BURDEN
- STANDARD POWER SUPPLY galvanically insulated
- OPERATING FREQUENCY
- SIGNAL INPUT
- SAMPLEMENT FREQUENCY
- EXAMPLES WHEN ORDERING
- WEIGHT (kg):


**ALTERNATED CURRENT**  
2RID36.4 / 2RID48.4

**DIRECT CURRENT**  
2RCD36.4 / 2RCD48.4

from 10% to 100% end scale (9990)	Adjustable	1,5VA
230V +/-10% (different power supply on request)	50/60 Hz	60mV
5A	one every second	
2RID36.4	2RCD36.4	
2RID36.4 110C	2RCD36.4 110C	
0,21 / 0,28	0,21 / 0,28	

**OUT OF SCALE**

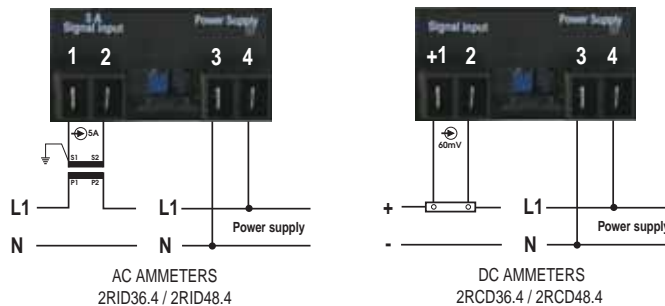
The out scale indication referred to the maximum value of 9990 is displayed by the illumination of the downer red point on the front of the instruments, and the display will show the exceeded value.

Example: end scale 9990A, input value 10030A, out scale display 


**POLARITY INVERSION**

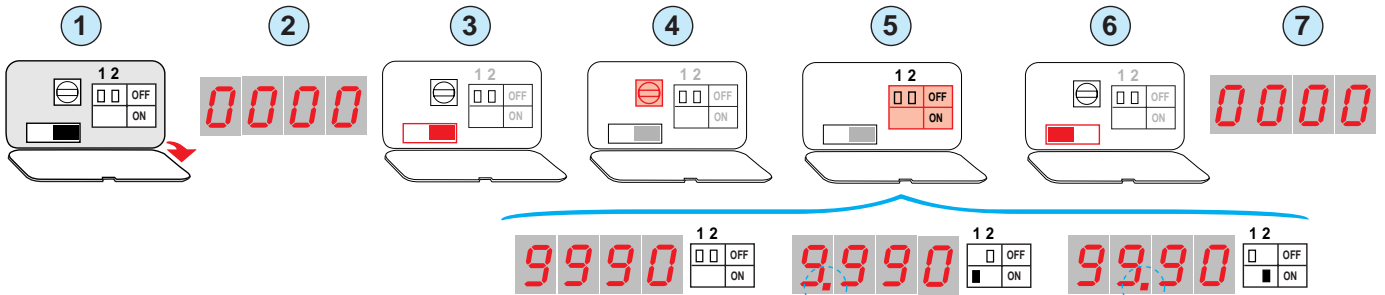
If the polarity of the signal input is inverted, the downer red led  lights-on on the last right

**CONNECTION DIAGRAMS**



**END SCALE AND DECIMAL POINT ADJUSTMENT WITH SIMULATION OF THE INPUT SIGNAL**

- 1) Open the back door with appropriate screwdriver
- 2) Power the instruments, after few seconds the display will show 0000 (automatic zero)
- 3) Move the micro switch on the right for to enter in the **signal input simulation** phase (example 5mA)
- 4) Turn the trimmer until the required end scale value is obtained (example: 4225 with simulated input 5mA - **the particularity of this instruments is that it is not necessary any effective signal input**)
- 5) Chose the position of the decimal point by the minidip.
  - With the two minidips in OFF position, no decimal numbers are chosen
  - With dip n°1 in ON position, two decimal numbers are chosen
  - With dip n°2 in ON position, one decimal number is chosen
- 6) Return the microswitch on the left to exit from the signal input simulation phase
- 7)  The display will shows 0000 but the preimposed end scale value is memorised (4225 = 5mA)



- **ADJUSTABLE END SCALE**
- **DECIMAL POINT**
- **BURDEN**
- **STANDARD POWER SUPPLY**  
galvanically insulated
- **SIGNAL INPUT**  
to specify when ordering
- **SAMPLEMENT FREQUENCY**
- **WEIGHT (kg):**

	DIRECT VOLTAGE	DIRECT CURRENT
	<b>2RCTD36.4 / 2RCTD48.4</b>	
	from 10% to 100% end scale (9990)	
	Adjustable	
	2VA	1,5VA
	230V +/-10% (different power supply on request)	
	1V - 10V - 100V - 500V	1mA - 5mA - 10mA - 20mA - 4/20mA
	one every second	
	0,20	0,27

**COMPOSITION OF THE CODE AND EXAMPLES WHEN ORDERING**

- When ordering it is necessary to indicate: instrument type, power supply, signal input and measuring unit
- 1 - Instrument type: 2RCTD36.4 (36x72) or 2RCTD48.4 (48x96)
- 2 - Signal input: 1mA - 5mA - 10mA - 20mA - 4/20mA (means the direct current indicator)  
1V - 10V - 100V - 500V (means the direct voltage indicator)
- 3 - Power supply: 230V - 110V - 24V AC +/-10%, 50/60 Hz    110V - 48V - 24V - 12V DC
- 4 - Measuring unit: A, kA, V, kV, Hz, °C, RPM, %, kg, kW, m/min, bar, m/sec, l/sec etc..

**EXAMPLE:**

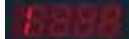
2RCTD36.4 10V 110 m/min This example means an indicator in direct voltage 36x72mm with signal input 10VDC, power supply 110VAC and the measuring unit in meter per minute. The end scale value is selected by the final use.

2RCTD48.4 4/20mA 110C °C This example means an indicator in direct current 48x96mm with signal input 4/20mADC, power supply 110VDC and the measuring unit in centigrad degrees. The end scale value is selected by the final use.


**EXAMPLES OF ADHESIVE MEASURING UNIT APPLIABLE ON THE FRONT OF THE INSTRUMENT**



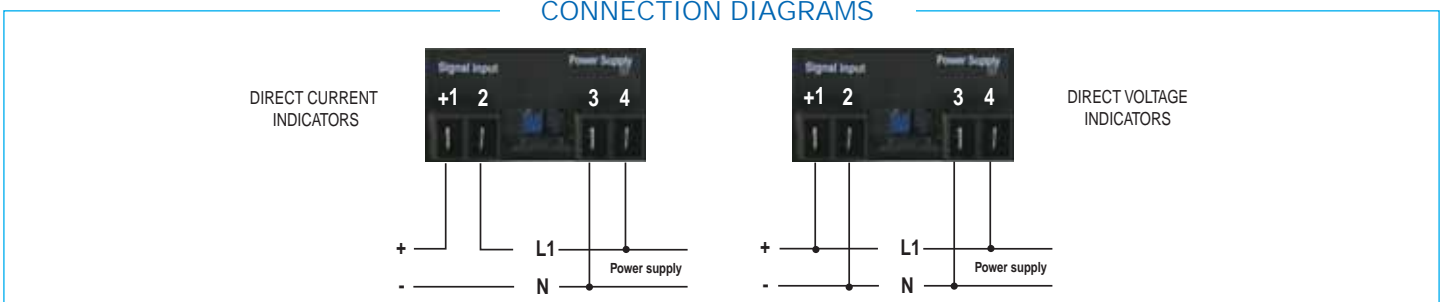
**OUT OF SCALE**

The out scale indication referred to the maximum value of 9990 is displayed by the turn-off the display and by a illumination of the "I" symbol  
Example: end scale 9990A, input value 10030A, out scale display 

**POLARITY INVERSION**

If the polarity of the signal input is inverted, the "minus" symbol  lights-on

**CONNECTION DIAGRAMS**





2RCTD36



2RCTD48

**2RCTD36.4A - 2RCTD48.4A AC instruments**  
**2RCTD36.4D - 2RCTD48.4D DC instruments**

These instruments are calibrated by the manufacturer following technical data indicated by the customer

- **BURDEN** Ammeters 1,5VA - Voltmeters 2VA
- **STANDARD POWER SUPPLY** galvanically insulated 230V +/-10% (different power supply on request)
- **⚠ When ordering indicate the end scale value, measuring unit, signal input and power supply** (this instrument has a fixed calibration, made by the manufacturer)
- **WEIGHT (kg):** 2RCTD36.4 (0,21) 2RCTD48.4 (0,28)

**COMPOSITION OF THE CODE AND EXAMPLES WHEN ORDERING**

- When ordering indicate the end scale value, measuring unit, signal input and power supply
- 1 - Instrument type: 2RCTD36.4A/D (36x72) or 2RCTD48.4A/D (48x96)
- 2 - Power supply:: 230V - 110V - 24VAC +/-10%, 50/60 Hz 110V - 48V - 24V - 12V DC of current or voltage, in AC or DC to chose between:
- 3 - Signal input: alternated current from 1A to 5A - direct current 1mA, 5mA, 10mA, 20mA, 4/20mA, 5A alternated voltage from 1V to 600V - direct voltage from 60mV to 600V
- 4 - End scale and Measuring unit: A, kA, V, kV, Hz, °C, RPM, %, kg, kW, m/min, bar, m/sec, l/sec etc..

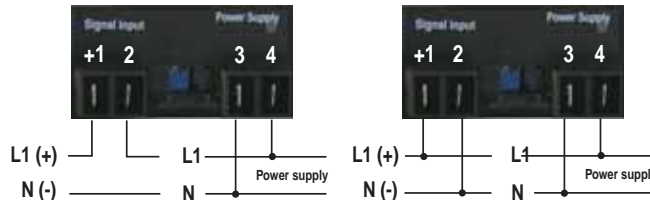
■ **EXAMPLE:**

2RCTD36.4A 125V 1500m/min This example means an indicator in alternated voltage 36x72mm with signal input 125VAC, power supply 230VAC, end scale value 1500 m/min

2RCTD48.4D 24C 75V 6980W This example means an indicator in direct voltage 48x96 mm with signal input 75VDC, power supply 24VDC, end scale value 6980W

**CONNECTION DIAGRAMS**

AC / DC CURRENT INDICATORS  
 2RCTD36.4A  
 2RCTD48.4A  
 2RCTD36.4D  
 2RCTD48.4D



AC / DC VOLTAGE INDICATORS  
 2RCTD36.4A  
 2RCTD48.4A  
 2RCTD36.4D  
 2RCTD48.4D

**MULTISCALE WATTMETERS AND VARMETERS FOR ALTERNATING CURRENT**



2RCTD72.D / 2RCTD96.D



2RCTD36 / 2RCTD48



2RCTD36.1 / 2RCTD48.1



2RCTD36.4 / 2RCTD48.4

- These devices consist of a 1mA direct current instrument (2RCTD) for use with an external multi-voltage accessory (1CORPA1CORPR).
- The possible systems are as follows:
  - 2RCTD + 1CORPA1 (1CORPR1) - Single phase, Wattmeter (Varmeter)
  - 2RCTD + 1CORPA2 (1CORPR2) - Three phase, Wattmeter (Varmeter), balanced load, without neutral, 3 wire
  - 2RCTD + 1CORPA3 (1CORPR3) - Three phase, Wattmeter (Varmeter), unbalanced load, without neutral, 3 wire (ARON)
  - 2RCTD + 1CORPA4 (1CORPR4) - Three phase, Wattmeter (Varmeter), balanced load, with neutral, 4 wire
  - 2RCTD + 1CORPA5 (1CORPR5) - Three phase, Wattmeter (Varmeter), unbalanced load, with neutral, 4 wire

■ **TECHNICAL DATA**

2RCTD input 1mA,

- 1CORPA1, 1CORPA2, 1CORPA3, 1CORPA4, 1CORPA5
- 1CORPR1, 1CORPR2, 1CORPR3, 1CORPR4, 1CORPR5:
- Auxiliary power supply (separate): 230V / 400V AC
- Nominal input values: voltage: 230V AC current: 5A (1A)
- Output nominal values: (selectable): **select 1mA**
- 1 - 5 - 10 - VDC e 1 - 5 - 10 - 20 - 4/20 mA DC
- Resistive load: 700Ω
- Measuring range: 0 ÷ Pn (0 ÷ Qn)
- Standard calibration: 100V,5A=500W (Var) 230V,5A=1000W (Var) 400V,5A=2000W (Var) **see table page 157**



**1CORPA1/2/3/4/5 (1CORPR1/2/3/4/5)**

■ **INFORMATION NECESSARY WHEN ORDERING**

- Reading instrument type: dimensions and number of digit
- System type: single phase or three phase, with or without neutral, balanced or unbalanced load; 3 or 4 wire
- Voltage: between phases; between phase and neutral. If the voltage transformer is used please indicate the primary and secondary value.
- Current: max 5A for direct connection. If a current transformer is used please indicate the primary and secondary value. (the C.T. should however be in class 0,5)
- Desired scale value (if different from standard)

■ **EXAMPLES WHEN ORDERING**

2RCTD72 1mA 80kW digital instrument 72x72, 3 digit, input 1mADC, power supply 230VAC, 80kW end scale value

+ 1CORPA3 400V 100/5A 80KW Three phase Wattmeter, unbalanced load, without neutral, 3 wire (ARON) voltmeter direct input 400V, ammeter input by means a C.T. 100A/5A and 80kW end scale value

- For connection diagram see from page 167 to 169

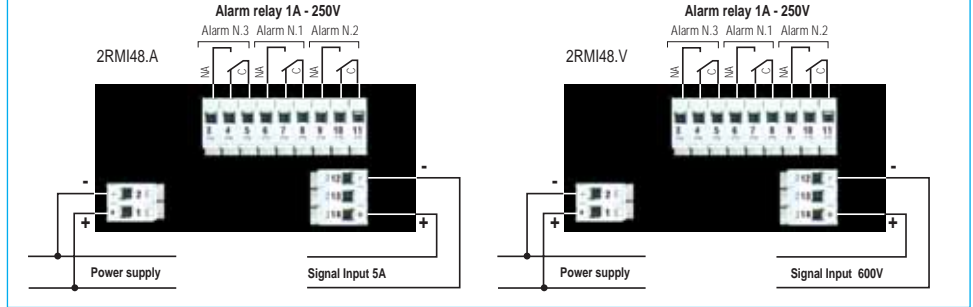


**2RMI48.A - AC ammeter**  
**2RMI48.V - AC voltmeter**

- These devices permit the adjustment of the beginning value, end scale value, alarm threshold value and the correspondent delay time, on site by the customer
- **ADJUSTABLE END SCALE** from -999 to 9998
- **DECIMAL POINT** Adjustable
- **BURDEN** 1,5W
- **STANDARD POWER SUPPLY** 230VAC +/-10% (different power supply on request)
- **ACCURACY CLASS** 0,5
- **SIGNAL INPUT** current: 5A - voltage: 600V (other on request)
- **EXAMPLES WHEN ORDERING** 2RMI48.A multiscale ammeter (48x96mm), power supply 230VAC  
 2RMI48.V multiscale voltmeter (48x96mm), power supply 230VAC
- **WEIGHT (kg):** 0,40

⚠ When ordering indicate the signal input, end scale value and power supply

**CONNECTION DIAGRAMS**

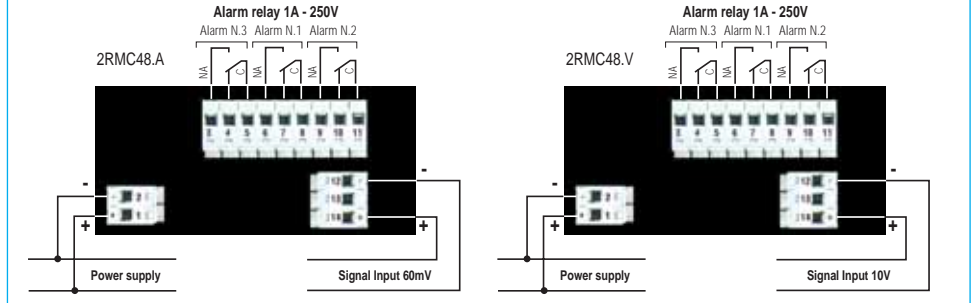


**2RMC48.A - DC ammeter**  
**2RMC48.V - DC voltmeter**

- These devices permit the adjustment of the beginning value, end scale value, alarm threshold value and the correspondent delay time, on site by the customer
- **ADJUSTABLE END SCALE** from -999 to 9998
- **DECIMAL POINT** Adjustable
- **BURDEN** 1,5W
- **STANDARD POWER SUPPLY** 230VAC +/-10% (different power supply on request)
- **ACCURACY CLASS** 0,5
- **SIGNAL INPUT** current: by shunt 60mV - voltage: 10, 100, 600VDC (to be specified)
- **EXAMPLES WHEN ORDERING** 2RMC48.A multiscale ammeter (48x96mm), power supply 230VAC  
 2RMC48.V multiscale voltmeter (48x96mm), power supply 230VAC
- **WEIGHT (kg):** 0,40

⚠ When ordering indicate the signal input, end scale value and power supply

**CONNECTION DIAGRAMS**



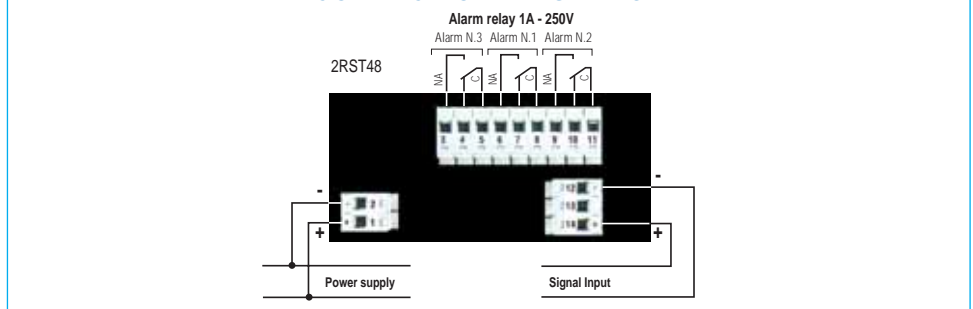
**2RST48 - DC current and voltage indicator**



- These devices permit the adjustment of the beginning value, end scale value, alarm threshold value and the correspondent delay time, on site by the customer
- **ADJUSTABLE END SCALE** from -999 to 9998
- **DECIMAL POINT** Adjustable
- **BURDEN** 1,5W
- **STANDARD POWER SUPPLY** 230VAC +/-10% (different power supply on request)
- **ACCURACY CLASS** 0,5
- **SIGNAL INPUT** ±1V, ±5V, ±10V, ±1mA, ±5mA, ±10mA, ±20mA, 4/20 mA specify when ordering
- **EXAMPLES WHEN ORDERING** 2RST48 1V DC voltage indicator (48x96mm), power supply 230VAC  
 2RST48 4/20mA DC current indicator (48x96mm), power supply 230VAC
- **WEIGHT (kg):** 0,40

⚠ When ordering indicate the signal input, end scale value, measure unit and power supply

**CONNECTION DIAGRAMS**



- The 10 led on front correspond to the reading in modality BAR GRAPH ( in % ) of the selected end scale value
- In programme phase , if the leds S1 or S2 or S3 are illuminated (on the upper part of the front) must be NOT considered
- This instrument is provided with two maximum thresholds (S1, S2) and one minimum threshold (S3). In the described example, we consider an instrument 10VDC input, 2000A end scale on which we want to select the threshold "S1" at 500A, the threshold "S2" at 1000A and the threshold "S3" at 250A
- The programming of these instruments is possible from -999 to 9998

- 1) Power the instrument (in absence of the measurement input it will shows a value between +/-4)



- 2) Don't connect the input signal and push contemporary the buttons "↑" and "↓" for 5 seconds to enter in programme modality of the **beginning of the scale**. Push "Sel" until the correspondent leds "10/full scale and "20/S1" are light-up



- 3) Now press the button "↑" or "↓" to select the required beginning scale value (To fast forward maintain pressure on the button"↑" or "↓")  
Example: 0



- 4) Press the button "Sel" to programme the **first maximum threshold**, the correspondent led "20/S1" will be illuminated



- 5) Now press the button "↑" or "↓" to select the required threshold value. Example 500A. The overpass of this value will be indicated by the illumination of the red led "S1" (after the selected delayed time on paragraphs 6 and 7)



- 6) Press again the button "Sel" to enter in the programme of the time delay of the first threshold. The led "30/tS1" will be illuminated



- 7) Press the button "↑" or "↓" to select the required delay time (from 0 to 25,5 seconds).  
Example 0,1 sec



- 8) Press the button "Sel" to programme the **second maximum threshold**, the correspondent led "70/S2" will be illuminated



- 9) Now press the button "↑" or "↓" to select the required threshold value. Example 1000A. The overpass of this value will be indicated by the illumination of the red led "S2" (after the selected delayed time on paragraphs 10 and 11)



- 10) Press again the button "Sel" for to enter in the programm of the time delay of the second threshold. The led "80/tS2" will be illuminated



- 11) Press the button "↑" or "↓" to select the required delay time (from 0 to 25,5 seconds).  
Example 5 sec



- 12) Press the button "Sel" to programme the **minimum threshold**, the correspondent led "90/S3" will be illuminated



- 13) Now press the button "↑" or "↓" to select the required threshold value. Example 250A. The overpass of this value will be indicated by the illumination of the red led "S3" (after the selected delayed time on paragraphs 14 and 15)



- 14) Press again the button "Sel" to enter in the programme of the time delay of the minimum threshold. The led "100/tS3" will be illuminated



- 15) Press the button "↑" or "↓" to select the required delay time (from 0 to 25,5 seconds).  
Example 0 sec



- 16) Press again the button "Sel" ; the leds "10/Full scale", "20/S1", "30tS1" will be illuminated. This page display the self-zeroing.  
**It is important not to modify the displayed value calibrated by the manufacturer.** ⚠



- 17) Press the button "Sel" the leds "90/S3" and 100/tS3 will be illuminated permitting the selection of the **end scale value** by pressing the button "↑" or "↓" (To fast forward maintain pressure on the button "↑" or "↓").  
Example 2000A



- 18) Push again the button "Sel" for at least 5 seconds, to return to the measurement phase.  
**Now connect the signal input** ⚠



- 19) To select the eventual **decimal point** maintain pressure on button "Sel"; you'll note that the decimal point moves between the numbers of the display. Release the button when the decimal point will be in the required position.  
Example 2.000

