

# Revalco®

Made in Italy

## digital measuring instruments





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# DIGITAL INSTRUMENTS TABLE

		SWITCHBOARD VERSION 4 DIGIT						MODULAR VERSION 3 DIGIT				
		STANDARD max depth 82 mm		TRUE RMS max depth 53 mm		TRUE RMS max depth 82 mm		TRUE RMS 2 DIN modules				
		A.C. current	Corrente continua	A.C. current		D.C. current		A.C. and D.C. current				
<b>Alarm thresholds</b>		NO	NO	NO	1 threshold	NO	1 threshold	NO	2 thresholds (1 for 48x48)	NO	1 MIN + 1 MAX	
<b>VOLTMETERS</b>	end scale value 500V	96X96 2ERID96V... 72X72 2ERID72V... 48X48 2ERID488V... 48X96 2ERID48V... 36X72 2ERID36V... 2DIN	2ERCD96V... 2ERCD72V... 2ERCD488V... 2ERCD48V... 2ERCD36V...	2RID96SV... 2RID72SV... 2RID48SV... 2RID48SV...S 2RID36SV...		2RID96SV... 2RID72SV... 2RID48SV... 2RID48SV...S 2RID36SV...					1RIMD2V...	
	end scale value 500V or 100V	96X96 72X72 48X48 48X96 36X72 2DIN					2RD96V...G100 2RD72V...100 2RD48V...G100 2RD36V...100	2RD96V...GS100 2RD72V...-S100 2RD488V...-S100 2RD48V...GS100 2RD36V...-S100			1RMD2V...	
	input 5A	96X96 72X72 48X48 48X96 36X72 2DIN	2ERID96A... 2ERID72A... 2ERID488A... 2ERID48A... 2ERID36A...		2RID96SA... 2RID72SA... 2RID48SA... 2RID48SA...S 2RID36SA...						1RIMD2A...	1RSDI
	input 60mV	96X96 72X72 48X48 48X96 36X72 2DIN	2ERCD96A... 2ERCD72A... 2ERCD488A... 2ERCD48A... 2ERCD36A...		2RCD96SA... 2RCD72SA... 2RCD48SA... 2RCD48SA...S 2RCD36SA...							
	input 5A (1A) or 60mV	96X96 72X72 48X48 48X96 36X72 2DIN					2RD96A...G 2RD72A... 2RD48A...G 2RD36A...	2RD96A...GS 2RD72A...-S 2RD488A...-S 2RD48A...GS 2RD36A...-S			1RMD2A...	
		96X96 72X72 48X48 48X96 36X72 2DIN	2ERID96SF... 2ERID72SF... 2ERID488SF... 2ERID48SF... 2ERID36SF...				2RD96F...G 2RD72F... 2RD48F...G 2RD36F...	2RD96F...GS 2RD72F...-S 2RD488F...-S 2RD48F...GS 2RD36F...-S			1RIMD2F...	
<b>PROCESS INSTRUMENTS</b> supplied with several measuring units set	<b>VOLTMETERS</b> end scale value 10V or 1V	96X96 72X72 48X48 48X96 36X72 2DIN				2RD96V...G101 2RD72V...101 2RD488V...101 2RD48V...G101 2RD36V...101	2RD96V...GS101 2RD72V...-S101 2RD488V...-S101 2RD48V...GS101 2RD36V...-S101			1RMD2V100(101)		
	<b>MILLI AMMETERS</b> input to define when ordering between: 1-5-10-20-4/20 mA	96X96 72X72 48X48 48X96 36X72 2DIN				2RD96T...G-... 2RD72T...-... 2RD48T...G-... 2RD36T...-...	2RD96T...GS... 2RD72T...-S... 2RD488T...-S... 2RD48T...GS... 2RD36T...-S...			1RMD2T...		
<b>SINGLE-PHASE DOUBLE V+A</b>	96X96 72X72 2DIN					2RD96AV...G 2RD72AV...	2RD96AV...GS 2RD72AV...-S			1RIMDA2V...		
<b>SINGLE-PHASE DOUBLE V+F</b>	2DIN									1RIMD2VF250...		
<b>THREE-PHASE DOUBLE V+A</b>	2DIN									1RIMD23AV		
<b>THREE-PHASE TRIPLE V+A+F</b>	72X72					2RD723AV...						
DIGIT height		14 mm (8 mm 48x48)		14 mm		8 mm (48x48); 14 mm (36x72 and 72x72), 20 mm (96x96 and 48x96)				10 mm		

Preliminary range  
Contact REVALCO for delivery time information

## QUALITY GUARANTEE

The **Revalco** range of measuring instruments are manufactured in accordance with the standards directed by recognised international organizations.

## GENERAL TECHNICAL CHARACTERISTICS

### STANDARDS

- Revalco digital measuring instruments are manufactured according to EN61010-1, EN60688 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 EN61010-1 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 +/-2 digit according to EN60688 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

- Dimensions of boxes follow the DIN 43718/s standards. Black color for the switchboard instruments and grey for the module versions.
- 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 2ERID... and 2RD...; while are 20 mm height on the types 2RD...G/2RD...GS; 8 mm height on the types 48x48. On the modular version the LED height is 10 mm.

### TERMINALS

- These are made of electronic terminals on switchboard models, while the modular versions have the brass screws.

### 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, or using rapid fixing systems. On the modular version the instruments are directly fixed on the DIN rail.

### MULTISCALE FUNCTION

- The ammeters for use with a C.T. or Shunts are arranged for selecting the different capacities, by adjusting the frontal buttons. 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 assortment 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.

**TRUE RMS:** these instruments are manufactured using a special technology in order to obtain the real reading of system adding the DC and AC components of current and voltages according to the formule:  $VAL_{rms} = \sqrt{(AC)^2 + (DC)^2}$   
Obtained measure is without algebraic mark.

## POWER SUPPLY

### AC POWER SUPPLY

- Standard supply is 230V +/- 10%, 50/60Hz galvanically insulated
- Other on request: 24V and 110V

### AC/DC POWER SUPPLY

- Standard code + suffix "P1" = 22...36VAC and 19...70VDC
- Standard code + suffix "P2" = 44...130VAC and 70...240VDC
- Standard code 2ERID... + suffix "P6" = 48...230VAC and 48...250VDC

## FAST FIXING SYSTEM

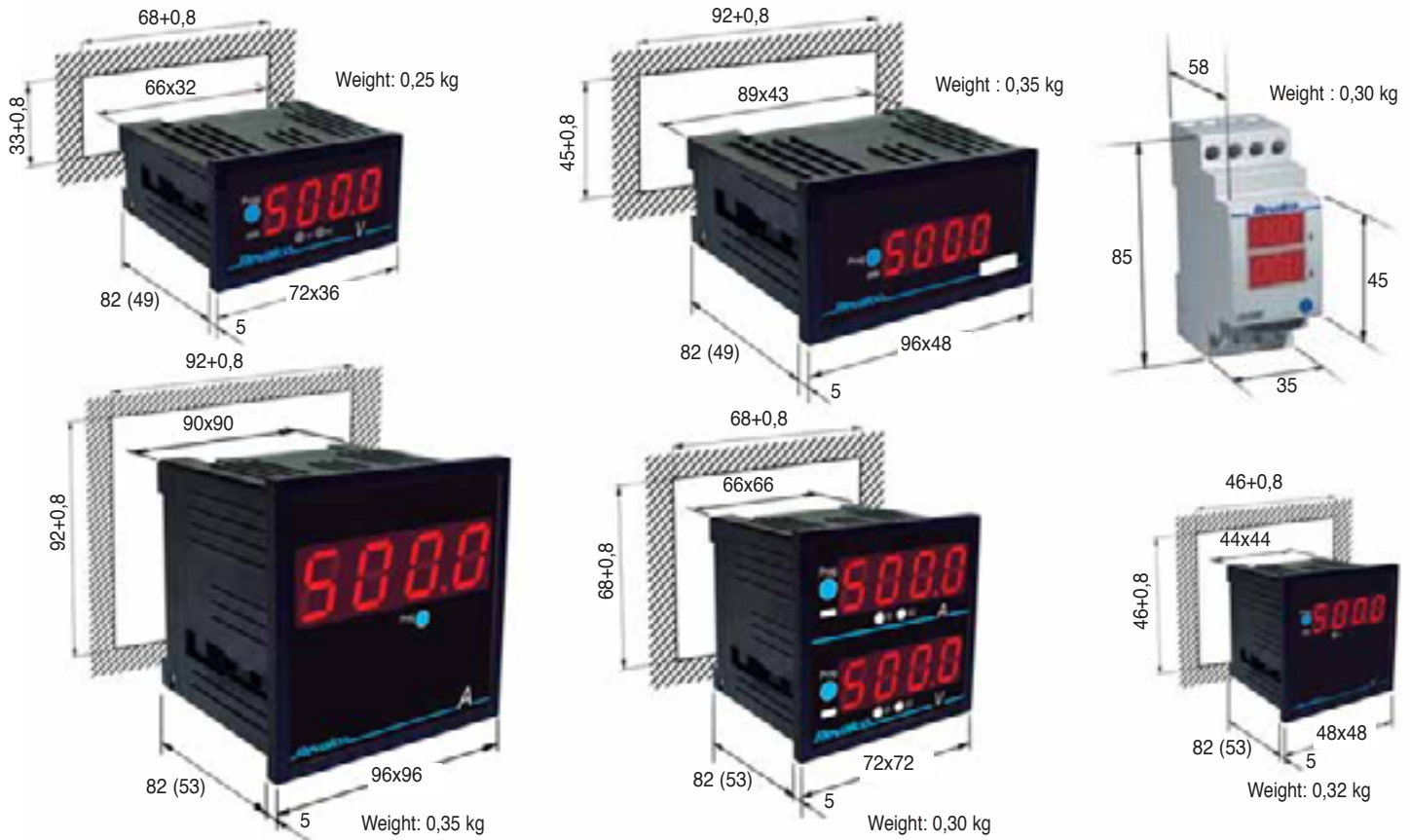


## STANDARD FIXING SYSTEM



Two fixing systems (equal for all models) furnished together with the instruments


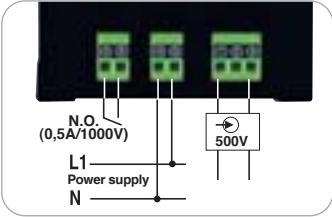
## DIMENSIONS IN mm



## SWITCHBOARD INSTRUMENTS - TRUE RMS


### VOLTMETERS 500V - REDUCED DEPTH

<b>AC AND DC</b>				<b>DEPTH 53 mm</b>	
					
<b>2RID96SV...</b>	<b>2RID72SV...</b>	<b>2RID48SV...</b>	<b>2RID36SV...</b>		
<ul style="list-style-type: none"> <li>- BURDEN</li> <li>- POWER SUPPLY</li> <li>- FREQUENCY</li> <li>- CLASS</li> <li>- DISPLAY</li> <li>- AC and DC range</li> <li>- ORDER EXAMPLES</li> </ul>	<p>1,5VA 230VAC ±10% standard 50/60Hz. For different supply see the codes on the order examples. 0÷100 Hz 0,5% ±2 digit referred to the end scale 1 display 4 digits red colour. Digit height 20 mm for models 48x96 and 96x96; Digit height 14 mm for models 36x72 and 72x72 500V - <b>In DC use the instrument shows positive measures only.</b></p> <p>2RID72SV230 power supply 230VAC, input 500V - 72x72mm 2RID36V-24 power supply 24VAC, input 500V - 36x72mm 2RID48SV110 power supply 110VAC, input 500V - 48x96mm</p>				

<b>AC AND DC</b>		<b>WITH THRESHOLD ALARM - DEPTH 53 mm</b>
		
<b>2RID48SV...S</b>		
<ul style="list-style-type: none"> <li>- BURDEN</li> <li>- POWER SUPPLY</li> <li>- FREQUENCY</li> <li>- CLASS</li> <li>- DISPLAY</li> <li>- AC and DC range</li> <li>- THRESHOLD ALARM</li> <li>- ORDER EXAMPLES</li> </ul>	<p>1,5VA 230VAC ±10% standard 50/60Hz. For different supply see the codes on the order examples. 0÷100 Hz 0,5% ±2 digit referred to the end scale 1 display 4 digits red colour. Digit height 20 mm 500V - <b>In DC use the instrument shows positive measures only.</b> 1 N.O. - 0,5A/1000V</p> <p>2RID48SV110-S power supply 110VAC, input 500V - 48x96mm - with threshold alarm 2RID48SV230-S power supply 230VAC, input 500V - 48x96mm - with threshold alarm 2RID48SV-24-S power supply 24VAC, input 500V - 48x96mm - with threshold alarm</p>	


# AMMETER 5A - REDUCED DEPTH

AC CURRENT		DEPTH 53 mm	
			
<b>2RID96SA...</b>	<b>2RID72SA...</b>	<b>2RID48SA...</b>	<b>2RID36SA...</b>
- BURDEN	0,5VA		
- POWER SUPPLY	230VAC $\pm 10\%$ standard 50/60Hz. <i>For different supply see the codes on the order examples.</i>		
- FREQUENCY	0 $\div$ 100 Hz		
- CLASS	0,5% $\pm 2$ digit referred to the end scale		
- DISPLAY	1 display 4 digits red colour. Digit height 20 mm for models 48x96 and 96x96; Digit height 14 mm for models 36x72 and 72x72		
- AC RANGE	from 5,00 to 9999		
	• Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted. Input from 0500 to 9999A with 5A steps, selectable by a frontal button		
- ORDER EXAMPLES	2RID72SA230 power supply 230VAC, input 5A - 72x72mm 2RID36A-24 power supply 24VAC, input 5A - 36x72mm 2RID48SA110 power supply 110VAC, input 5A - 48x96mm		

AC CURRENT		WITH THRESHOLD ALARM - DEPTH 53 mm	
			
<b>2RID48SA...S</b>			
- BURDEN	0,5VA		
- POWER SUPPLY	230VAC $\pm 10\%$ standard 50/60Hz. <i>For different supply see the codes on the order examples.</i>		
- FREQUENCY	0 $\div$ 100 Hz		
- CLASS	0,5% $\pm 2$ digit referred to the end scale		
- DISPLAY	1 display 4 digits red colour. Digit height 20 mm		
- AC RANGE	from 5,00 to 9999		
	• Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted. Input from 0500 to 9999A with 5A steps, selectable by a frontal button		
- THRESHOLD ALARM	1 N.O. - 0,5A/1000V		
- ORDER EXAMPLES	2RID48SA110-S power supply 110VAC, input 5A - 48x96mm - with threshold alarm 2RID48SA230-S power supply 230VAC, input 5A - 48x96mm - with threshold alarm 2RID48SA-24-S power supply 24VAC, input 5A - 48x96mm - with threshold alarm		

# AMMETER 60mV - REDUCED DEPTH

DC CURRENT		DEPTH 53 mm	
			
<b>2RCD96SA...</b>	<b>2RCD72SA...</b>	<b>2RCD48SA...</b>	<b>2RCD36SA...</b>
- BURDEN	0,5VA		
- POWER SUPPLY	230VAC $\pm 10\%$ standard 50/60Hz. <i>For different supply see the codes on the order examples.</i>		
- CLASS	0,5% $\pm 2$ digit referred to the end scale		
- DISPLAY	1 display 4 digits red colour. Digit height 20 mm for models 48x96 and 96x96; Digit height 14 mm for models 36x72 and 72x72		
- DC RANGE	from 5,00 to 9999		
	• Input 60mV it is necessary to connect the Shunt .../60mV correspondent to the end scale value setted		
- ORDER EXAMPLES	2RCD72SA230 power supply 230VAC, input 60mV - 72x72mm 2RCD36A-24 power supply 24VAC, input 60mV - 36x72mm 2RCD48SA110 power supply 110VAC, input 60mV - 48x96mm		

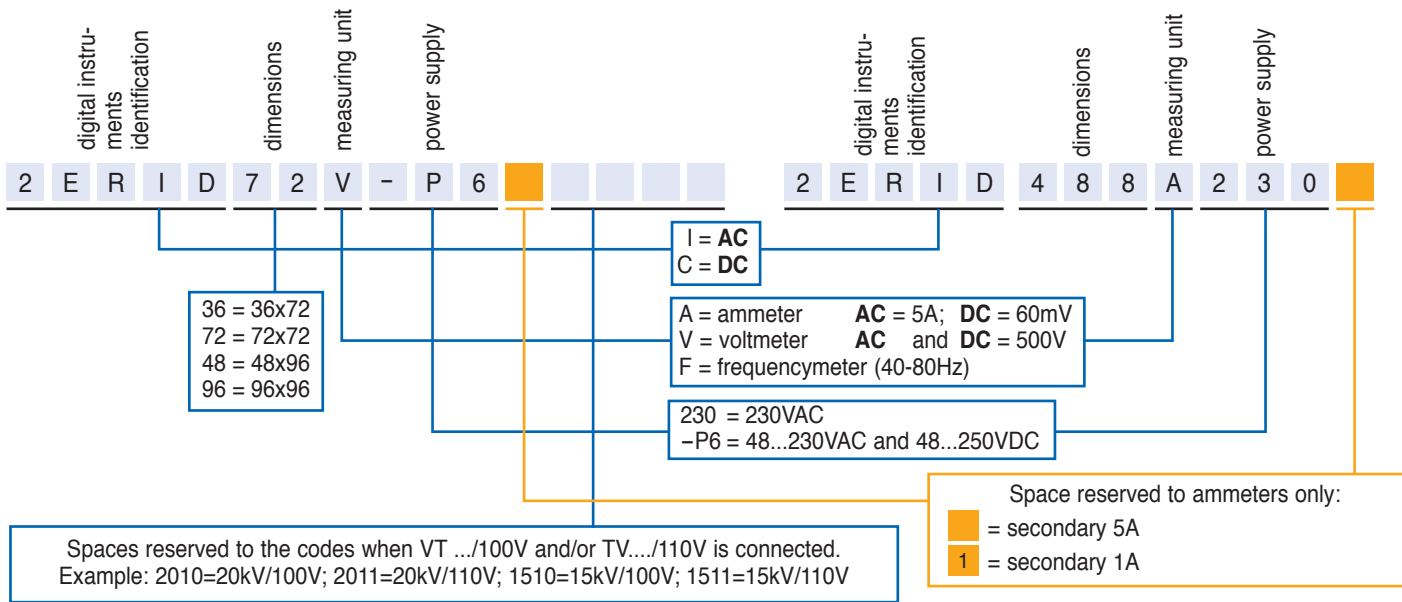
DC CURRENT		WITH THRESHOLD ALARM - DEPTH 53 mm	
			
<b>2RCD48SA...S</b>			
- BURDEN	0,5VA		
- POWER SUPPLY	230VAC $\pm 10\%$ standard 50/60Hz. <i>For different supply see the codes on the order examples.</i>		
- CLASS	0,5% $\pm 2$ digit referred to the end scale		
- DISPLAY	1 display 4 digits red colour. Digit height 20 mm		
- DC RANGE	from 5,00 to 9999		
	• Input 60mV it is necessary to connect the Shunt .../60mV correspondent to the end scale value setted		
- THRESHOLD ALARM	1 N.O. - 0,5A/1000V		
- ESEMPI D'ORDINE	2RCD48SA110-S power supply 110VAC, input 60mV - 48x96mm - with threshold alarm 2RCD48SA230-S power supply 230VAC, input 60mV - 48x96mm - with threshold alarm 2RCD48SA-24-S power supply 24VAC, input 60mV - 48x96mm - with threshold alarm		

# DIGITAL SWITCHBOARD INSTRUMENTS - STANDARD

## CODES TABLES

ammeters, voltmeters and frequencymeters 36x72, 48x96, 72x72 and 96x96

ammeters, voltmeters and frequencymeters 48x48



## FREQUENCYMETERS

DEPTH 82 mm



2ERID96F230



2ERID72F230



2ERID488F230



2ERID48F230

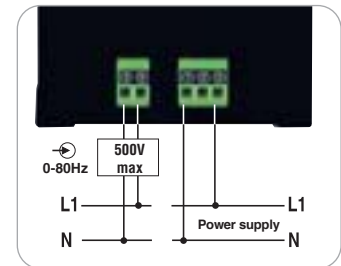


2ERID36F230

- BURDEN
  - POWER SUPPLY
  - CLASS
  - DISPLAY
  - RANGE
  - ORDER EXAMPLES
- 2ERID36F230  
2ERID48F230  
2ERID72F-P6  
2ERID96F-P6  
2ERID488F230

0,5VA  
230VAC ±10% standard 50/60Hz.  
0,5% ±2 digit referred to the end scale  
1 display 4 digits red colour. Digit height 14 mm (8 mm for model 48x48)  
front 0 to 80Hz max 500V

power supply 230VAC - 36x72 mm  
power supply 230VAC - 48x96 mm  
sole power supply 48...230VAC and 48...250VDC - 72x72 mm  
sole power supply 48...230VAC and 48...250VDC - 96x96 mm  
power supply 230VAC - 48x48 mm



## VOLTMETERS

DEPTH 82 mm



2ERID96V230  
2ERCD96V230



2ERID72V230  
2ERCD72V230



2ERID488V230  
2ERCD488V230



2ERID48V230  
2ERCD48V230

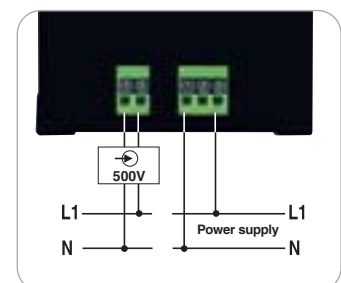


2ERID36V230  
2ERCD36V230

- AC Codes  
DC Codes
- BURDEN
  - POWER SUPPLY
  - FREQUENCY
  - CLASS
  - DISPLAY
  - AC RANGE
  - DC RANGE
  - ORDER EXAMPLES
- 2ERID36V230 2ERCD36V230  
2ERID48V230 2ERCD48V230  
2ERID72V-P6 2ERCD72V-P6  
2ERID96V-P6 2ERCD96V-P6  
2ERID488V230 2ERCD488V230

0,5VA  
230VAC ±10% standard 50/60Hz.  
45÷65 Hz  
0,5% ±2 digit referred to the end scale  
1 display 4 digits red colour. Digit height 14 mm (8 mm for model 48x48)  
500V standard. 100V and 110V VT insertion on request  
500V standard

power supply 230VAC - 36x72 mm  
power supply 230VAC - 48x96 mm  
sole power supply 48...230VAC and 48...250VDC - 72x72 mm  
sole power supply 48...230VAC and 48...250VDC - 96x96 mm  
power supply 230VAC - 48x48 mm



# AMMETERS

DEPTH 82 mm



AC Codes  
DC Codes

2ERID96A230  
2ERCD96A230

2ERID72A230  
2ERCD72A230

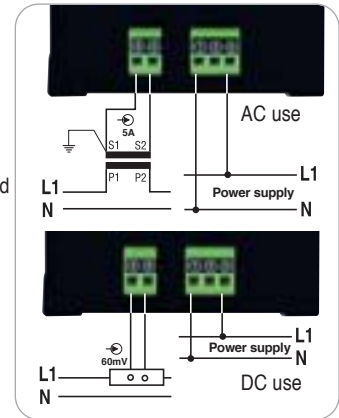
2ERID488A230  
2ERCD488A230

2ERID48A230  
2ERCD48A230

2ERID36A230  
2ERCD36A230

- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.
- FREQUENCY 45÷65 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. Digit height 14 mm (8 mm for model 48x48)
- END SCALE VALUE from 1 to 9000A with 5A steps, selectable by a frontal button
- AC RANGE Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted
- DC RANGE Input 60mV - it is necessary to connect the shunt.../60mV correspondent to the end scale value setted
- ORDER EXAMPLES
 

2ERID36A230	2ERCD36A230	power supply 230VAC - 36x72 mm
2ERID48A230	2ERCD48A230	power supply 230VAC - 48x96 mm
2ERID72A-P6	2ERCD72A-P6	sole power supply 48...230VAC and 48...250VDC - 72x72 mm
2ERID96A-P6	2ERCD96A-P6	sole power supply 48...230VAC and 48...250VDC - 96x96 mm
2ERID488A230	2ERCD488A230	power supply 230VAC - 48x48 mm
- PROGRAMMING To enter in programming page press the frontal button "SEL", then select the needed end scale value by pressing the buttons "Up" or "Down". To exit press again "SEL" button.

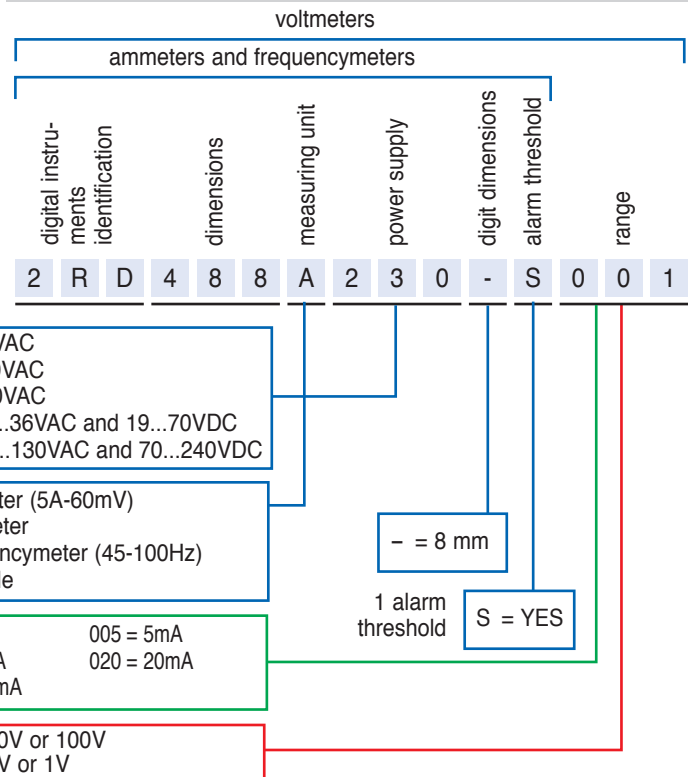
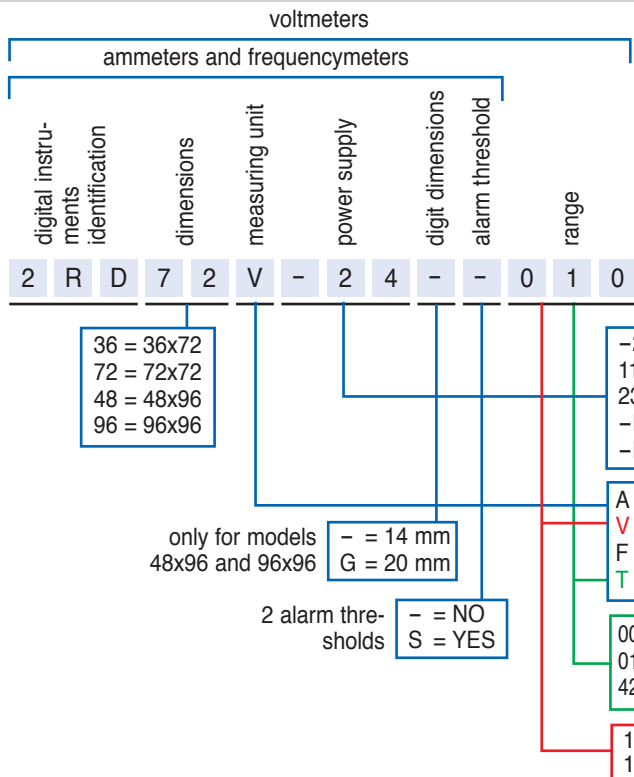


## DIGITAL SWITCHBOARD INSTRUMENTS - TRUE RMS

### CODES TABLES

ammeters, voltmeters and frequencymeters 36x72, 48x96, 72x72 and 96x96

ammeters, voltmeters and frequencymeters 48x48



# VOLTMETERS 500V or 100V

DEPTH 82 mm



2RD96V230G100



2RD72V230100



2RD48V230G100



2RD36V230100

- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
For different supply see the codes on the order examples.
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48
- AC/DC RANGE 500V (lower ranges can be selected using the "Dot" function in "Programming page") or 100V (used as end scale value or secondary input from VT). Primaries values between 0500 to 9999V with 5V steps can be selected by the front button



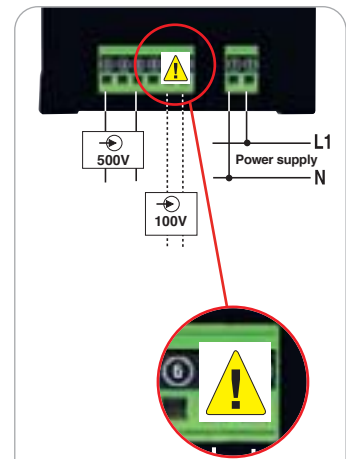
**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**

If 500V input is used, it is non possible to connect the 100V terminals also and viceversa.

Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

**ORDER EXAMPLES**

- 2RD36V-24--100 power supply 24VAC, input 500V or 100V - 36x72mm
- 2RD48V110G-100 power supply 110VAC, input 500V or 100V - 48x96mm
- 2RD72V-P1--100 power supply 22....36VAC and 19....70VDC, input 500V or 100V - 72x72mm
- 2RD96V-P2G-100 power supply 44....130VAC and 70....240VDC, input 500V or 100V - 96x96mm
- PROGRAMMING see following pages



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

## WITH THRESHOLD ALARM

DEPTH 82 mm



2RD96V230GS100



2RD72V230-S100



2RD488V230-S100



2RD48V230GS100



2RD36V230-S100

- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
For different supply see the codes on the order examples.
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48
- On 48x48 model the left upper side led is lighted-on with DC measures only
- AC/DC RANGE 500V (lower ranges can be selected using the "Dot" function in "Programming page") or 100V (used as end scale value or secondary input from VT selected by the front button)



**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**

If 500V input is used, it is non possible to connect the 100V terminals also and viceversa.

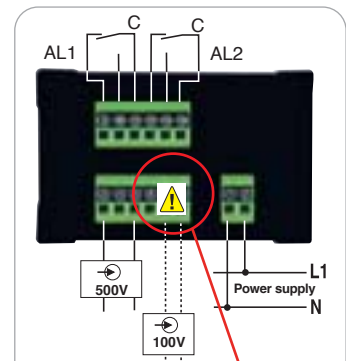
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

**THRESHOLD ALARM**

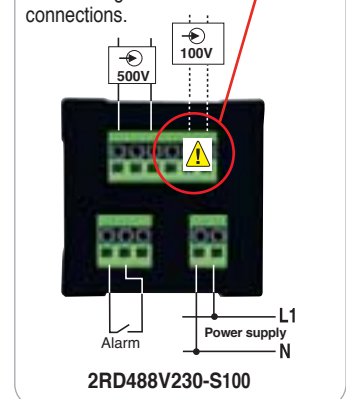
**RELAYS CHARACTERISTICS**

**ORDER EXAMPLES**

- 2RD36V230-S100 power supply 230VAC, input 500V or 100V - 36x72mm
- 2RD48V-24GS100 power supply 24VAC, input 500V or 100V - 48x96mm
- 2RD488V110-S100 power supply 110VAC, input 500V or 100V - 48x48mm
- 2RD72V-P1-S100 power supply 22....36VAC and 19....70VDC, input 500V or 100V - 72x72mm
- 2RD96V-P2GS100 power supply 44....130VAC and 70....240VDC, input 500V or 100V - 96x96mm
- PROGRAMMING see following pages



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.



2RD488V230-S100

# VOLTMETERS 10V or 1V

DEPTH 82 mm



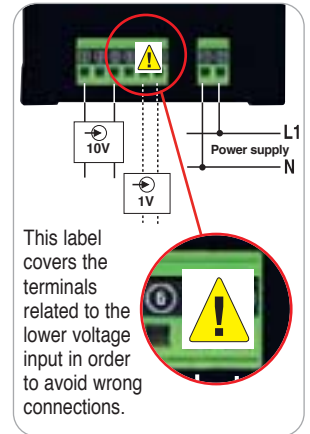
- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
*For different supply see the codes on the order examples.*
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48
- AC/DC RANGE 10V and 1V (lower ranges can be selected using the "Dot" function in "Programming page")



**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 10V input is used, it is non possible to connect the 1V terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

- ORDER EXAMPLES
  - 2RD36V-24--101 power supply 24VAC, input 10V or 1 V - 36x72mm
  - 2RD48V110G-101 power supply 110VAC, input 10V or 1 V - 48x96mm
  - 2RD72V-P1--101 power supply 22....36VAC and 19....70VDC, input 10V or 1 V - 72x72mm
  - 2RD96V-P2G-101 power supply 44....130VAC and 70....240VDC, input 10V or 1 V - 96x96mm
- PROGRAMMING see following pages

With these codes, adhesive labels set is supplied free of charge.  
It contains several measuring units to apply on the proper front area under necessity.



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

A	kA	W
V	kV	Hz
kW	kVA	kvar
l/sec	l/min	l/h
m/sec	m/min	m/h
°C	g	kg
°F	Giri/min	RPM
%	bar	dB
mA	Personal unit	

## WITH THRESHOLD ALARM

DEPTH 82 mm



- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
*For different supply see the codes on the order examples.*
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48

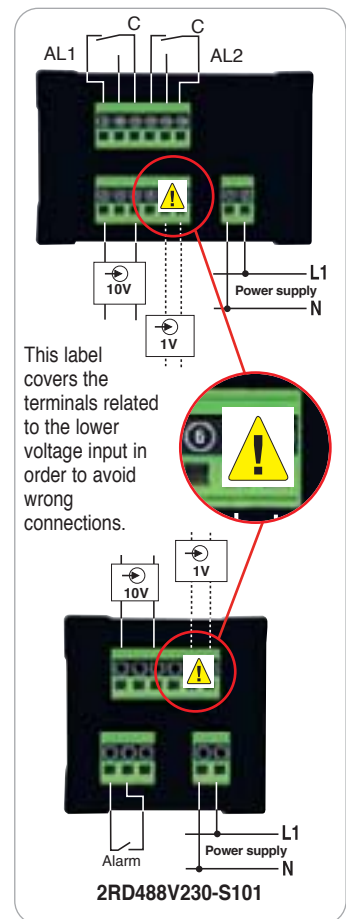
- On 48x48 model the left upper side led is lighted-on with DC measures only
- AC/DC RANGE 10V and 1V (lower ranges can be selected using the "Dot" function in "Programming page")
- THRESHOLD ALARM 1 threshold alarm for model 48x48, 2 threshold alarms for other model
- RELAYS CHARACTERISTICS 8A, 250V (0,1A - 230V for model 48x48)



**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 10V input is used, it is non possible to connect the 1V terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

- ORDER EXAMPLES
  - 2RD488V230-S101 power supply 230VAC, input 10V or 1V - 48x48mm
  - 2RD36V-24-S101 power supply 24VAC, input 10V or 1V - 36x72mm
  - 2RD48V230GS101 power supply 230VAC, input 10V or 1V - 48x96mm
  - 2RD72V-P1-S101 power supply 22....36VAC and 19....70VDC, input 10V or 1V - 72x72mm
  - 2RD96V-P2GS101 power supply 44....130VAC and 70....240VDC, input 10V or 1V - 96x96mm
- PROGRAMMING see following pages

With these codes, adhesive labels set is supplied free of charge.  
It contains several measuring units to apply on the proper front area under necessity.



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

A	kA	W
V	kV	Hz
kW	kVA	kvar
l/sec	l/min	l/h
m/sec	m/min	m/h
°C	g	kg
°F	Giri/min	RPM
%	bar	dB
mA	Personal unit	

# AMMETERS 5A (1A) or 60mV

DEPTH 82 mm

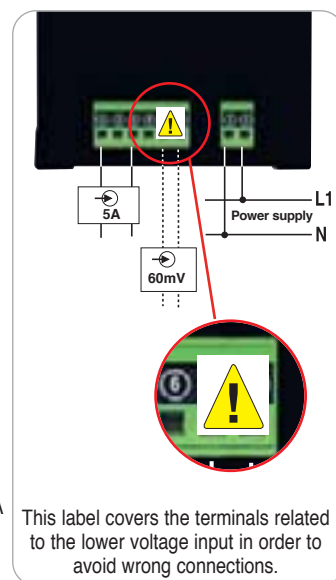


- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
For different supply see the codes on the order examples.
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48
- AC/DC RANGE from 5,00 to 9999
  - Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted. Input from 0500 to 9999A with 5A steps, selectable by a frontal button. lower ranges than 500A can be selected using the "Dot" function in "Programming page"
  - Input 1A - This range is obtained multiplying the primary value of CT to use for the constant K= 5 (example: 1000/1A -> K=5000). In this case the precision class is more higher than 0,5%. End scale selection up to 2000A maximum.
  - Input 60mV - It is necessary to connect the shunt.../60mV correspondent to the end scale value setted



**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 5A input is used, it is non possible to connect the 60mV terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

- ORDER EXAMPLES
  - 2RD36A-24 power supply 24VAC, input 5A or 60mV - 36x72mm
  - 2RD48A110G power supply 110VAC, input 5A or 60mV - 48x96mm
  - 2RD72A-P1 power supply 22....36VAC and 19....70VDC, input 5A or 60mV - 72x72mm
  - 2RD96A-P2G power supply 44....130VAC and 70....240VDC, input 5A or 60mV - 96x96mm
- PROGRAMMING see following pages



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

## WITH THRESHOLD ALARM

DEPTH 82 mm

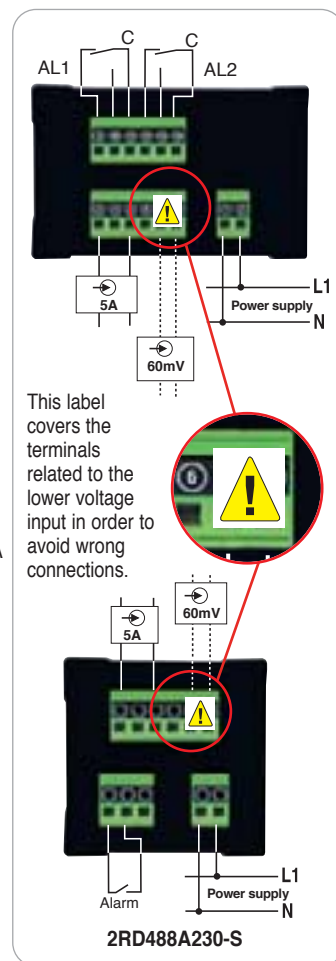


- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
For different supply see the codes on the order examples.
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48
- On 48x48 model the left upper side led is lighted-on with DC measures only
- AC/DC RANGE from 5,00 to 9999
  - Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted. Input from 0500 to 9999A with 5A steps, selectable by a frontal button. lower ranges than 500A can be selected using the "Dot" function in "Programming page"
  - Input 1A - This range is obtained multiplying the primary value of CT to use for the constant K= 5 (example: 1000/1A -> K=5000). In this case the precision class is more higher than 0,5%. End scale selection up to 2000A maximum.
  - Input 60mV - It is necessary to connect the shunt.../60mV correspondent to the end scale value setted
- THRESHOLD ALARM 1 threshold alarm for model 48x48, 2 threshold alarms for other model
- RELAYS CHARACTERISTICS 8A, 250V (0,1A - 230V for model 48x48)



**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 5A input is used, it is non possible to connect the 60mV terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

- ORDER EXAMPLES
  - 2RD36A230-S power supply 230VAC, input 5A or 60mV - 36x72mm
  - 2RD48A-24GS power supply 24VAC, input 5A or 60mV - 48x96mm
  - 2RD488A110-S power supply 110VAC, input 5A or 60mV - 48x48mm
  - 2RD72A-P1-S power supply 22....36VAC and 19....70VDC, input 5A or 60mV - 72x72mm
  - 2RD96A-P2GS power supply 44....130VAC and 70....240VDC, input 5A or 60mV - 96x96mm
- PROGRAMMING see following pages

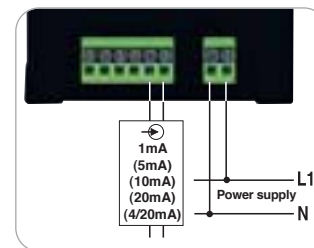


This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

2RD488A230-S

# MILLIAMMETERS 1mA / 5mA / 10mA / 20mA / 4-20mA

DEPTH 82 mm



- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz. For different supply see the codes on the order examples.
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48
- RANGE 0-20mA = 2RD..T230--020 4-20mA = 2RD..T230--420 0-10mA = 2RD..T230--010  
0-5mA = 2RD..T230--005 0-1mA = 2RD..T230--001

Instruments with input 4/20mA can be calibrated in factory only.  
These instruments have one input only which must be specified during the order (see the examples)

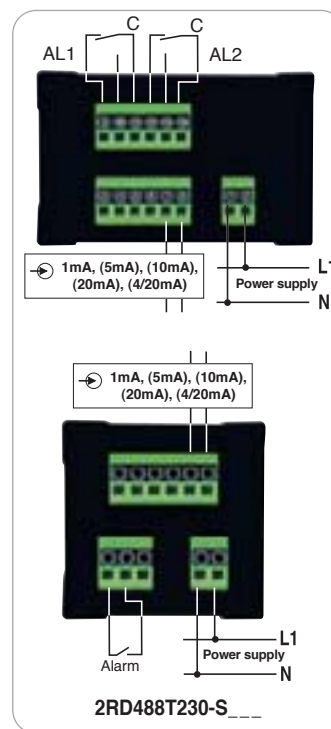
- ORDER EXAMPLES  
2RD36T-24--020 power supply 24VAC, input 20mA - 36x72mm  
2RD48T110G-420 power supply 110VAC, input 4-20mA - 48x96mm  
2RD72T-P1--005 power supply 22...36VAC e 19...70VDC, input 5mA - 72x72mm  
2RD96T-P2G-010 power supply 44...130VAC e 70...240VDC, input 10mA - 96x96mm
- PROGRAMMING see following pages

With these codes, adhesive labels set is supplied free of charge.  
It contains several measuring units to apply on the proper front area under necessity.

A	kA	W
V	kV	Hz
kW	kVA	kvar
l/sec	l/min	l/h
m/sec	m/min	m/h
°C	g	kg
°F	Giri/min	RPM
%	bar	dB
mA	Personal unit	

## WITH THRESHOLD ALARM

DEPTH 82 mm



- BURDEN 0,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz. For different supply see the codes on the order examples.
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48
- On 48x48 model the left upper side led is lighted-on with DC measures only
- RANGE 0-20mA = 2RD..T230--020 4-20mA = 2RD..T230--420 0-10mA = 2RD..T230--010  
0-5mA = 2RD..T230--005 0-1mA = 2RD..T230--001
- THRESHOLD ALARM 1 threshold alarm for model 48x48, 2 threshold alarms for other model
- RELAYS CHARACTERISTICS 8A, 250V (0,1A - 230V for model 48x48)

Instruments with input 4/20mA can be calibrated in factory only.  
These instruments have one input only which must be specified during the order (see the examples)

- ORDER EXAMPLES  
2RD488T230-S001 power supply 230VAC, input 1mA - 48x48mm  
2RD36T-24-S020 power supply 24VAC, input 20mA - 36x72mm  
2RD48T110GS420 power supply 110VAC, input 4-20mA - 48x96mm  
2RD72T-P1-S005 power supply 22...36VAC and 19...70VDC, input 5mA - 72x72mm  
2RD96T-P2GS010 power supply 44...130VAC and 70...240VDC, input 10mA - 96x96mm
- PROGRAMMING see following pages

With these codes, adhesive labels set is supplied free of charge.  
It contains several measuring units to apply on the proper front area under necessity.

A	kA	W
V	kV	Hz
kW	kVA	kvar
l/sec	l/min	l/h
m/sec	m/min	m/h
°C	g	kg
°F	Giri/min	RPM
%	bar	dB
mA	Personal unit	

# FREQUENCYMETERS

DEPTH 82 mm



- BURDEN 2VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz. For different supply see the codes on the order examples.
- FREQUENCY 10÷100 Hz max 500V (min 70V) and max 100V from VT (min 15V)

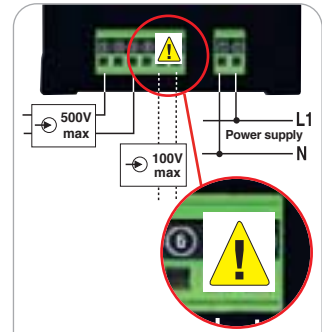


**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 100V input is used, it is non possible to connect the 500V terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

- CLASS 0,005% ±1 digit referred to the end scale value 45÷65Hz
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48

- ORDER EXAMPLES  
2RD36F230 power supply 230VAC - 36x72mm  
2RD48F-24G power supply 24VAC - 48x96mm  
2RD72F-P1 power supply 22....36VAC and 19....70VDC - 72x72mm  
2RD96F-P2G power supply 44....130VAC and 70....240VDC - 96x96mm

With these codes, adhesive labels set is supplied free of charge.  
It contains several measuring units to apply on the proper front area under necessity.



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

A	kA	W
V	kV	Hz
kW	kVA	kvar
l/sec	l/min	l/h
m/sec	m/min	m/h
°C	g	kg
°F	Giri/min	RPM
%	bar	dB
mA	Personal unit	

## WITH THRESHOLD ALARM

DEPTH 82 mm



- BURDEN 2VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz. For different supply see the codes on the order examples.
- FREQUENCY 10÷100 Hz max 500V (min 70V) and max 100V from VT (min 15V)



**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 100V input is used, it is non possible to connect the 500V terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

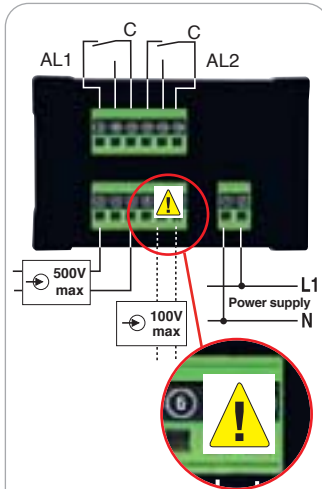
- CLASS 0,005% ±1 digit referred to the end scale value 45÷65Hz
- DISPLAY 1 display 4 digits red colour. 20 mm height digit for models 48x96 and 96x96  
14 mm height digit for models 36x72 and 72x72  
8 mm height digit for model 48x48

- On 48x48 model the left upper side led is lighted-on with DC measures only
- THRESHOLD ALARM 1 threshold alarm for model 48x48, 2 threshold alarms for other model
- RELAYS CHARACTERISTICS 8A, 250V (0,1A - 230V for model 48x48)

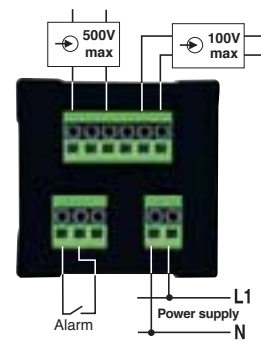
- ORDER EXAMPLES  
2RD36F230-S power supply 230VAC - 36x72mm  
2RD48F-24GS power supply 24VAC - 48x96mm  
2RD488F110-S power supply 110VAC - 48x48mm  
2RD72F-P1-S power supply 22....36VAC and 19....70VDC - 72x72mm  
2RD96F-P2GS power supply 44....130VAC and 70....240VDC - 96x96mm
- PROGRAMMING see following pages

With these codes, adhesive labels set is supplied free of charge.  
It contains several measuring units to apply on the proper front area under necessity.

A	kA	W
V	kV	Hz
kW	kVA	kvar
l/sec	l/min	l/h
m/sec	m/min	m/h
°C	g	kg
°F	Giri/min	RPM
%	bar	dB
mA	Personal unit	



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.



2RD488F230-S

# DOUBLE SINGLE PHASE INSTRUMENTS

## VOLTMETERS + AMMETERS 72x72 mm

DEPTH 82 mm



2RD72AV230

- BURDEN Ammeters 0,5VA - Voltmeters 1,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
*For different supply see the codes on the order examples.*
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale value
- DISPLAY 2 display 4 digits red colour. 14 mm height digit
- AC AND DC VOLTMETER RANGE 500V or 100V
- AC AND DC AMMETER RANGE from 5,00 to 9999
- Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted. Input from 0500 to 9999A with 5A steps, selectable by a frontal button. lower ranges than 500A can be selected using the "Dot" function in "Programming page"
- Input 60mV - It is necessary to connect the shunt.../60mV correspondent to the end scale value setted

**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**

If 5A input is used, it is non possible to connect the 60mV terminals also and viceversa.

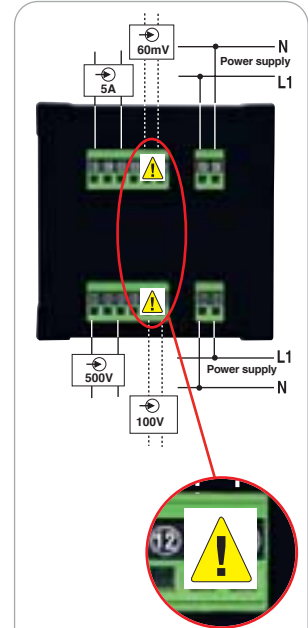
If 500V input is used, it is non possible to connect the 100V terminals also and viceversa.

Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.



### ORDER EXAMPLES

- 2RD72AV230-- power supply 230VAC, 72x72mm
- 2RD72AV-24-- power supply 24VAC, 72x72mm
- 2RD72AV110-- power supply 110VAC, 72x72mm
- 2RD72AV-P1-- power supply 22....36VAC and 19....70VDC, 72x72mm
- 2RD72AV-P2-- power supply 44....130VAC and 70....240VDC, 72x72mm
- PROGRAMMING see following pages



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

## VOLTMETERS + AMMETERS 96x96 mm



2RD96AV230G

- TECHNICAL DATA AND CONNECTION DIAGRAM equal to model 72x72
- DISPLAY 2 display 4 digits red colour. 20 mm height digit

### ORDER EXAMPLES

- 2RD96AV230G- power supply 230VAC, 96x96mm
- 2RD96AV-24G- power supply 24VAC, 96x96mm
- 2RD96AV110G- power supply 110VAC, 96x96mm
- 2RD96AV-P1G- power supply 22....36VAC and 19....70VDC, 96x96mm
- 2RD96AV-P2G- power supply 44....130VAC and 70....240VDC, 96x96mm
- PROGRAMMING see following pages

## VOLTMETERS + AMMETERS WITH THRESHOLD ALARM 72x72 mm

DEPTH 82 mm



2RD72AV230-S

- BURDEN Ammeters 0,5VA - Voltmeters 1,5VA
- POWER SUPPLY 230VAC ±10% standard 50/60Hz.  
*For different supply see the codes on the order examples.*
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale value
- DISPLAY 2 display 4 digits red colour. 14 mm height digit
- AC AND DC VOLTMETER RANGE 500V or 100V
- AC AND DC AMMETER RANGE from 5,00 to 9999
- Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted. Input from 0500 to 9999A with 5A steps, selectable by a frontal button. lower ranges than 500A can be selected using the "Dot" function in "Programming page"
- Input 60mV - It is necessary to connect the shunt.../60mV correspondent to the end scale value setted

- THRESHOLD ALARM 2 threshold alarms on voltmeter and 2 threshold alarms on ammeter

### RELAYS CHARACTERISTICS

8A, 250V

**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**

If 5A input is used, it is non possible to connect the 60mV terminals also and viceversa.

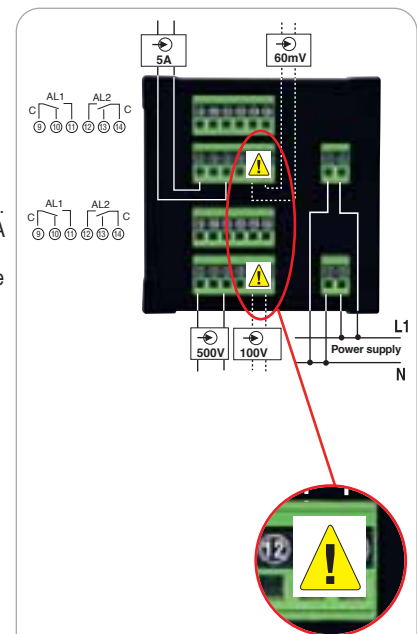
If 500V input is used, it is non possible to connect the 100V terminals also and viceversa.

Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.



### ORDER EXAMPLES

- 2RD72AV230-S power supply 230VAC, 72x72mm
- 2RD72AV-24-S power supply 24VAC, 72x72mm
- 2RD72AV110-S power supply 110VAC, 72x72mm
- 2RD72AV-P1-S power supply 22....36VAC and 19....70VDC, 72x72mm
- 2RD72AV-P2-S power supply 44....130VAC and 70....240VDC, 72x72mm
- PROGRAMMING see following pages



This label covers the terminals related to the lower voltage input in order to avoid wrong connections.

## VOLTMETERS + AMMETERS WITH THRESHOLD ALARM 96x96 mm



2RD96AV230GS

- TECHNICAL DATA AND CONNECTION DIAGRAM equal to model 72x72
- DISPLAY 2 display 4 digits red colour. 20 mm height digit

### ORDER EXAMPLES

- 2RD96AV230GS power supply 230VAC, 96x96mm
- 2RD96AV-24GS power supply 24VAC, 96x96mm
- 2RD96AV110GS power supply 110VAC, 96x96mm
- 2RD96AV-P1GS power supply 22....36VAC and 19....70VDC, 96x96mm
- 2RD96AV-P2GS power supply 44....130VAC and 70....240VDC, 96x96mm
- PROGRAMMING see following pages

# TRIPLE THREE PHASE INSTRUMENTS

**VOLTMETERS + AMMETERS + FREQUENCYMETERS**

**DEPTH 82 mm**

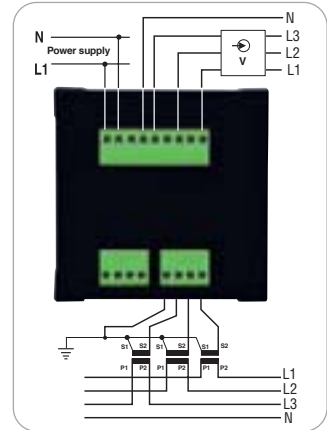


2RD723AV

- BURDEN
  - POWER SUPPLY
  - CLASS
  - DISPLAY
  - AMMETER RANGE
  - VOLTMETER RANGE
  - FREQUENCYMETER RANGE
  - DIMENSIONS
  - ORDER EXAMPLES
- 2RD723AV  
2RD723AV-24  
2RD723AV110  
2RD723AV-P1  
2RD723AV-P2

Ammeters 0,5VA - Voltmeters 1,5VA  
230VAC ±10% standard 50/60 Hz  
0,5% ±2 digit referred to the end scale value  
3 display 3 digits red colour. 7 mm height digit  
Input from 5 to 999A with 5A steps, selectable by a frontal button.  
Input **5A** - it is necessary to connect the CT .../5A correspondent to the end scale value setted.  
**(phase-neutral)** 290V max - **(phase-phase)** 500V max  
45/80 Hz  
72x72 mm

power supply 230VAC  
power supply 24VAC  
power supply 110VAC  
power supply 22....36VAC and 19....70VDC  
power supply 44....130VAC and 70....240VDC



Measurements displaying:  
the measurements and signalling pages which appear (pushing and releasing the frontal button) are the following

PUSHED BUTTON	RELEASED	DESCRIPTION
phase-phase voltages	phase-phase voltages	Voltage measure (V) First upper led lights-on  If (near every phase voltage value)the points on the right side of display light-on, it means that the sequence of the phases is WRONG
phase-neutral voltages	phase-neutral voltages	Voltage measure (V) Central led lights-on  If (near every phase-neutral voltage value)the points on the right side of display light-on, it means that the sequence of the phases is WRONG
phase currents	phase currents	current measure (A) Last downer led lights on
frequency	frequency	Frequency measure (Hz)

**PROGRAMMING:** To enter in programming page, make a long pressure (4 seconds about) on the frontal button  
When the programming request is recognised the 3 frontal LED will flash contemporary; this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed ; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed.

The value change immediately and closed to him a flashing points appear meaning that the value is in modification phase.

To fast forward maintain pressure on the frontal button.

The value is automatically saved in permanent way when the automatic display of the pages starts again.

The following can be made by pressing the buttons:

1. Pressed during the automatic display of the pages, it increases the time you stay on this page until it is released.
2. Pressed during the setting of some value (when all the points on the right flashes) decrease step by step this value and it increases the time you stay on this page until it is released.
3. Pressing contemporary the buttons values increase one step each time without fast forward possibility

DEFAULT PARAMETER	POSSIBLE VALUES	DESCRIPTION
average	VALUE from 1 to 15	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilizaton. The numbering rise up from 1 to 15; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters.
Default page	ONE OF THE AVAILABLE PAGES	Select the main page that you want to see after the initial powering of the instrument. Default value = phase-phase voltages
CT .../5A	VALUE from 5 to 999 every 5 steps	Select the ratio .../5A of the current transformer. Decimal point is automatically selected, and up to 10A the display shows 0.00; from 10A to 100A it shows 00.0; from 105A to 999A it shows 000 Default value = 100
voltage setting	VALUE from 50 to 577	It represent the NOMINAL voltage value of end scale value. Phase-phase voltage on the central line. Phase-neutral voltage on the lower line.  The default value (calibrated in factory) is 231V (400V phase-phase).

# PROGRAMMINGS

## FOR SWITCHBOARD INSTRUMENTS SERIE 2RID... 2RCD... REDUCED DEPTH

To enter in programming page, make a long pressure (4 seconds about) on the front button. Releasing the button all words will flash quickly, this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed. To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.

The following programming pages can be present or not depending by the model used.



The value which appear when the button is released, is the TRMS component, so the measure doesn't has any mark

DEFAULT PARAMETER	POSSIBLE VALUES	DESCRIPTION
End scale Page valid for ammeter only	VALUE from 500 to 9999	This page selects the end scale value (except the decimal point, automatic) which must be shown when the input signal is maximum. For DC measurements there is simmetricity also for negative values obtained when the input polarity is inverted (ammeter 60mV only). Selecting values less than 500, the decimal point is automatically positioned. Default value 500.0
average	VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabiliziation. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 30.
zero adjuster	VALUE from 0 to 200	In case the display (once powered and without input connection) shows a value different from zero, select this page and set the same value pushing the frontal button. Example: is display shows 002, select 2 by the frontal button. Default value 0.
threshold 1 activation or deactivation	active max threshold active min threshold deactive threshold	Proper relay and led will be actived when the value of the measure will be <b>higher</b> than the selected limit (max threshold) Default value "Hi". Proper relay and led will be actived when the value of the measure will be <b>lower</b> than the selected limit (min threshold) Relay and led will be never active so the other programming pages connected with the thresholds will be not available.
Available page only if "th1" is different from "OFF"		
threshold 1 delay application	Excitation delay Not excitation delay	Delay time is applied during the <u>activation</u> . Relay will works after the selected delay time. Delay time is applied during the <u>deactivation</u> . Relay will works after the selected delay time.
Available page only if "th1" is different from "OFF"		
threshold 1 delay time	VALUE from 0.0 to 25.5	This page selects the delay time value, expressed in seconds. Default value 0.2
Available page only if "th1" is different from "OFF"		
threshold 1 value	VALUE from -9999 to +9999	It is the threshold intervention value (except the decimal point) Default value 250

## FOR SWITCHBOARD INSTRUMENTS SERIE 2RD... DEPTH 82 mm

Measurements displaying: the measurements and signalling pages which appear (pushing and releasing the frontal button) are the following




















PUSHED BUTTON	RELEASED BUTTON	DESCRIPTION
AC+DC value (if voltmeter)	AC+DC value (if ammeter)	TRMS value (AC+DC). The measured value which appear is the true RMS. The measure doesn't has any mark

To enter in programming page, make a long pressure (4 seconds about) on the front button. When the programming request is recognised "Set" page appears. Releasing the button all words will flash quickly, this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed ; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed. To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.

The following programming pages can be present or not depending by the model used.



DEFAULT PARAMETER	POSSIBLE VALUES	DESCRIPTION
End scale	VALUE from 500 to 9999	This page selects the end scale value (except the decimal point) which must be shown when the input signal is maximum. For DC measurements there is simmetricity also for negative values obtained when the input polarity is inverted. Used in combination whit "SSc" parameter it permits personalized visualizations. Selecting values less than 500, the decimal point is automatically positioned. Default value 500.0
average	VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabiliziation. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 30.
decimal point		Selects the position of decimal point. The end scale value is showed, and after every pressure of button, it change the position as per the following sequence: 500.0 (default decimal); 50.00 (centesimal); 5.000 (millesimal); 5000 (entire value)

	VALUE from -9999 to +9999	Select a beginning scale correction (except the decimal point) used to obtain a certain value when input signal is 0 or when the value must be different from 0. Default value 0.
		Available page for AC + DC (TRMS) readings. Selected in factory on "Yes" position - <b>DON'T MODIFY IT</b>
		Available page for AC readings. Selected in factory on "No" position - <b>DON'T MODIFY IT</b>
		Available page for DC readings. Selected in factory on "No" position - <b>DON'T MODIFY IT</b>
		Available page for percentage ondulation factor (Ripple). Selected in factory on "No" position. <b>DON'T MODIFY IT</b>
	VALUE from 0 to 200	In case the display (once powered and without input connection) shows a value different from zero, select this page and set the same value pushing the frontal button. Example: is display shows 002, select 2 by the frontal button. Default value 0.
	active max threshold	Proper relay and led will be actived when the value of the measure will be <b>higher</b> than the selected limit (max threshold) Default value "Hi".
		
threshold 1 or 2 activation or deactivation		Proper relay and led will be actived when the value of the measure will be <b>lower</b> than the selected limit (min threshold)
		Relay and led will be never active so the other programming pages connected with the thresholds will be not available.
deactive threshold		
<b>Available page only if "th1" and/or "th2" are different from "OFF"</b>		
	Excitation delay	Delay time is applied during the <u>activation</u> . Relay will works after the selected delay time.
		
threshold 1 or 2 delay application		Delay time is applied during the <u>deactivation</u> . Relay will works after the selected delay time.
	Not excitation delay	
<b>Available page only if "th1" and/or "th2" are different from "OFF"</b>		
		VALUE from 0.0 to 25.5
threshold 1 or 2 delay time		This page selects the delay time value, expressed in seconds. Default value 0.2
<b>Available page only if "th1" and/or "th2" are different from "OFF"</b>		
		AC+DC value (UAd or AAd)
threshold 1 or 2 source		The threshold is applied to the RMS (AC+DC) value
<b>Available page only if "th1" and/or "th2" are different from "OFF"</b>		
		VALUE from -9999 to +9999
threshold 1 or 2 value		It is the threshold intervention value (except the decimal point) Default value 250

## BARGRAPH INDICATORS - TRUE RMS

### LED VERSION

- These instruments permit to show 2, 3 or 4 measures in the same time (depending by the model) through high intensity leds.
- The electronic construction permits to use them in nets on which vibrations, shocks or other dynamics solicitations are possible like generating sets, portable instruments, ship panel boards etc.
- **On request** it is possible to supply the instruments with high front IP protection for special applications on which the water, chemical products etc. is an essential condition.
- LED test: when powered, these devices make a self test lighting on each LED every 200ms
- The measure of the values is in **true RMS** also in presence of distortions up to the 20<sup>th</sup> harmonic wave.
- These instruments are provided by a relay with commutation function when (after minimum 10 sec from the powering) the following permanent conditions (for minimum 5 sec) are present: 190V > voltage < 260V; 48Hz > frequency < 52Hz; or 58Hz > frequency < 62Hz  
The condition "contact in alarm" is immediate; condition "light-off device" means that the contact is in alarm position as well as voltage and/or frequency been out of the mentioned range.
- Construction and functioning are conform to CEI 11-20 directives.



2RI72HAVH



2RI36AVHZ...APT



2RI36VHZPT

#### VISUALIZATION OF CURRENT, VOLTAGE AND FREQUENCY

##### - 230V 50Hz voltage reading

<b>2RI36AVHZ 40APT</b>	End scale 40A, connection by means of CT 40/5A
<b>2RI36AVHZ 50APT</b>	End scale 50A, connection by means of CT 50/5A
<b>2RI36AVHZ 60APT</b>	End scale 60A, connection by means of CT 60/5A
<b>2RI36AVHZ 80APT</b>	End scale 80A, connection by means of CT 80/5A
<b>2RI36AVHZ 100APT</b>	End scale 100A, connection by means of CT 100/5A

##### - 400V voltage reading (referred to 230VAC 50Hz auxiliary supply)

<b>2RI36AVHZ 40A 400</b>	End scale 40A, connection by means of CT 40/5A
<b>2RI36AVHZ 50A 400</b>	End scale 50A, connection by means of CT 50/5A
<b>2RI36AVHZ 60A 400</b>	End scale 60A, connection by means of CT 60/5A
<b>2RI36AVHZ 80A 400</b>	End scale 80A, connection by means of CT 80/5A
<b>2RI36AVHZ 100A 400</b>	End scale 100A, connection by means of CT 100/5A

#### VISUALIZATION OF VOLTAGE AND FREQUENCY

##### - 2RI36VHZPT

## VISUALIZATION OF CURRENT, VOLTAGE, FREQUENCY AND HOURMETER FUNCTION

### - 230V 50Hz voltage reading

<b>2RI72HAVH 40A</b>	End scale 40A, connection by means of CT 40/5A
<b>2RI72HAVH 50A</b>	End scale 50A, connection by means of CT 50/5A
<b>2RI72HAVH 60A</b>	End scale 60A, connection by means of CT 60/5A
<b>2RI72HAVH 80A</b>	End scale 80A, connection by means of CT 80/5A
<b>2RI72HAVH 100A</b>	End scale 100A, connection by means of CT 100/5A

If hourmeter is requested for **60Hz** use, codes become (as example):

**2RI72HAVH 40AX** End scale 40A, connection by means of CT 40/5A

### - 400V voltage reading (referred to 230VAC 50Hz auxiliary supply)

<b>2RI72HAVH 40A 400</b>	End scale 40A, connection by means of CT 40/5A
<b>2RI72HAVH 50A 400</b>	End scale 50A, connection by means of CT 50/5A
<b>2RI72HAVH 60A 400</b>	End scale 60A, connection by means of CT 60/5A
<b>2RI72HAVH 80A 400</b>	End scale 80A, connection by means of CT 80/5A
<b>2RI72HAVH 100A 400</b>	End scale 100A, connection by means of CT 100/5A

**2RI72HAVH 40AX 400** End scale 40A, connection by means of CT 40/5A

## TECHNICAL CHARACTERISTICS

### Auxiliary power supply

- range	140 ... 260V selfsupplied
- max absorbed power	2VA
- galvanic insulation between voltage and current input	

### Input voltmeter circuit

- direct insertion	max 290 V
- permanent overload	120% (nominal 230VAC)
- thermic overload (1 s)	150% (nominal 230VAC)
- input impedance	2MΩ L-N

### Input ammeter circuit

- nominal current	Current
- permanent overload	5 A
- thermic overload (1 s)	120%
	200%

### Voltage measurement

- range	range:
	190...260V (true RMS)

### Current Measurement

- range insertion by means of C.T.	Range:
	0.05...5.00A (true RMS)

### Frequency Measurement

- nominal value	Range:
- range	50/60Hz (automatic)
- response time	48...52 Hz and 58...62 Hz
	<300ms

### Compatible current transformers

- nominal current	5 A
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### Electrical characteristics

- Galvanic insulation	3kV between relay and contact coil
- change over relay	250VAC, 8A (resistive load), 2000W

### Visualization

- LED	red, green and yellow colours
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### Environment conditions

Ambient temperature:	
- nominal temperature	0...+45 °C
- range	-5...+55 °C
- storage temperature	-10...+70 °C
- humidity	10...95 %
- atmospheric pressure	70...110 kPa

### Standards CEI

- Safety CEI EN 61010-1	300V CAT III
- Accuracy class CEI EN 60688	
- Electromagnetic compatibility (immunity) CEI EN 61000-6-2	
- Electromagnetic compatibility (emission) CEI EN 61000-6-4	
- Protection IP CEI EN 60529	

### Crest factor

2,5 (Voltage and Current)

On 2RI72HAVH instruments, the run hourmeter model is **4RK30**.

## RELATION BETWEEN LEDS AND MEASURED VALUE

### CURRENT (example referred to 100/5A model)

#### Bargraph with green leds

Led "10"	Light-on from 1 to 10%
(under these values, all leds are light-off)	
Led "20"	Light-on from 11 to 20%
Led "30"	Light-on from 21 to 30%
Led "40"	Light-on from 31 to 40%
Led "50"	Light-on from 41 to 50%
Led "60"	Light-on from 51 to 60%
Led "70"	Light-on from 61 to 70%
Led "80"	Light-on from 71 to 80%
Led "90"	Light-on from 81 to 90%
Led "100"	Light-on from 91 to 100%

Bargraph flashes over 100% value

### VOLTAGE 230V AC reading

#### Direct measurement in Volt -> Single led light-on

Led "0-190" yellow	Flashing light-on from 0 to 185V, Fix light-on from 186 to 195V
Led "200" yellow	Light-on from 196 to 205V
Led "210" yellow	Light-on from 206 to 215V
Led "220" green	Light-on from 216 to 225V
Led "230" green	Light-on from 226 to 235V
Led "240" green	Light-on from 236 to 245V
Led "250" red	Light-on from 246 to 255V
Led "260" red	Fix light-on from 256 to 265V, Flashing light-on over 265V

### VOLTAGE 400V AC reading

#### Direct measurement in Volt -> Single led light-on

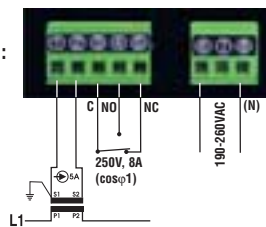
Led "0-330" yellow	Flashing light-on from 0 to 315V, Fix light-on from 316 to 335V
Led "350" yellow	Light-on from 346 to 355V
Led "360" yellow	Light-on from 356 to 365V
Led "380" green	Light-on from 376 to 385V
Led "400" green	Light-on from 396 to 405V
Led "415" green	Light-on from 414 to 420V
Led "430" red	Light-on from 426 to 435V
Led "450" red	Fix light-on from 446 to 455V, Flashing light-on over 455V

### FREQUENCY Direct measurement in Hz with

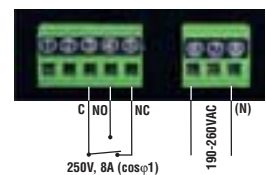
#### automatic selection 50 or 60Hz -> Single led light-on

Led "48" yellow	Flashing light-on from 0 to 47Hz, Fix light-on from 47,1 to 49Hz
Led "50" green	Light-on from 49,1 to 51Hz
Led "52" red	Fix light-on from 51,1 to 53Hz, Flashing light-on from 53,1 to 55Hz
Led "58" yellow	Flashing light-on from 55,1 to 57Hz, Fix light-on from 57,1 to 59Hz
Led "60" green	Light-on from 59,1 to 61Hz
Led "62" red	Fix light-on from 61,1 to 63Hz, Flashing light-on over 63Hz

- CURRENT, VOLTAGE AND FREQUENCY: 2RI36AVHZ ...A
- CURRENT, VOLTAGE, FREQUENCY AND HOURMETER FUNCTION: 2RI72HAVH ...A



- VOLTAGE AND FREQUENCY: 2RI36VHZ

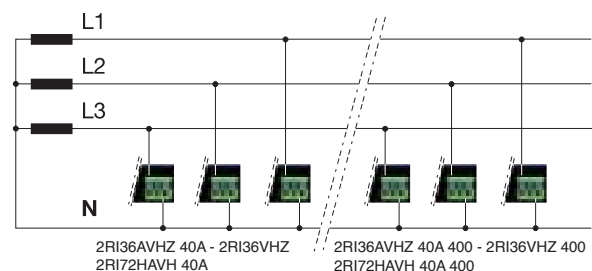


Instrument measures phase-neutral voltage **only (230V)**.

The same instrument can shows the measure of 400V (model 2RI36...400 and 2RI72HAVH...400), but in any case the connection must be linked to 230V ( $230V \times \sqrt{3} = 400V$ )



Contact position is referred to a light-on device with voltage and/or frequency within the mentioned ranges



# 5 BARGRAPH LED VOLTMETER

## 5 LED VOLTMETERS



2RI33V230  
2RI33V400



2RI33V230T  
2RI33V400T

- Economic Voltmeter constituted by 5 red LEDs suitable for use on generating sets or any net subjected to vibrations.
- This device is available in horizontal (2RI33V230) and vertical (2RI33V230T) version able to read voltage at 230V, or in horizontal (2RI33V400) and vertical (2RI33V400T) version able to read voltage at 400V, (but referred to 230VAC auxiliary power supply)
- Instrument measures phase-neutral voltage **only (230V)**.

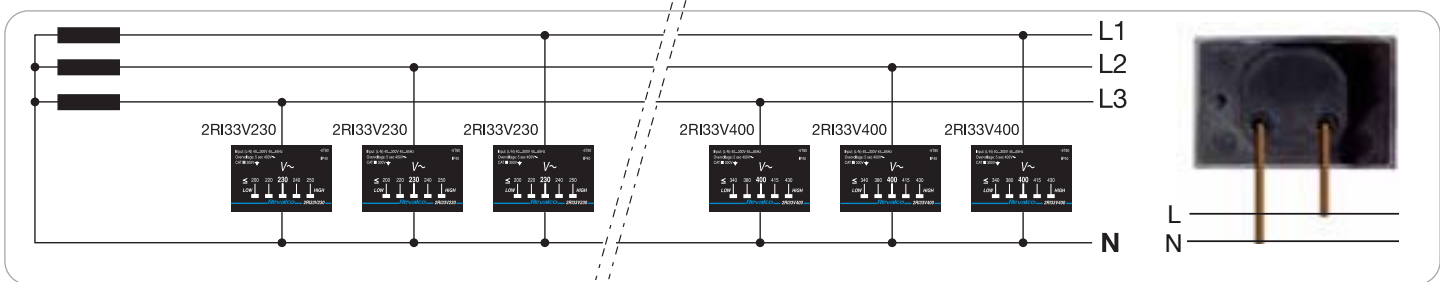
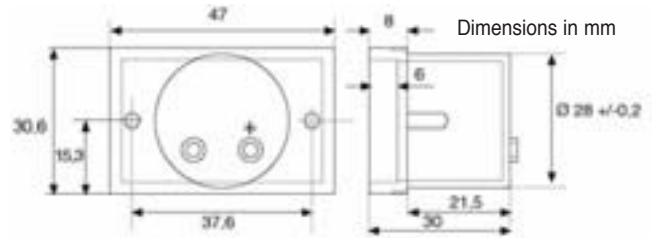


The same instrument can show the measure of 400V (model 2RI33V400 and 2RI33V400T), but in any case the connection must be linked to 230V ( $230V \times \sqrt{3} = 400V$ )

- **BURDEN** 0,5VA
- **AUXILIARY POWER SUPPLY** self supplied
- **RANGE** 40...300VAC
- **VOLTMETER CIRCUIT** Direct insertion max 300V  
Thermic overload 400V for 5 seconds  
Frequency 45...65Hz
- **NOMINAL TEMPERATURE** -5 ... +80 °C
- **PROTECTION DEGREE** IP40
- **STANDARDS** Safety CEI EN 61010-1 300V ACT III  
Accuracy CEI EN 60688
- **PATENTED INSTRUMENTS VA/2006/A/33**
- **WEIGHT (kg)** 0,05



Fast fixing system



## LED VOLTMETERS + FREQUENCYMETERS



2RI36VH230



2RI36VH400

- These instruments make it possible to adjust the voltage and frequency in small electronic units. As it is possible to replace the voltmeter and frequency meter there is a considerable saving from an economical point of view as well as space on the electrical switchboard.

- **BURDEN** 0,5VA
- **ACCURACY CLASS** 1%
- **DISPLAY** by 2 groups of 3 leds electronic circuit each
- **STANDARD POWER SUPPLY** selfpowered 230V/50Hz +/-10%
- The standard instruments are calibrated at 230V and 50Hz
- If the electronic unit delivers 230V at 50Hz the green Led lights up
- If there is a drop in the voltage of the above-mentioned data, the yellow Led lights up (while the green Led remains light)
- If on the other hand there is an increase in the above-mentioned data, the red Led lights up (while the green Led remains light)
- In order to restore the normal values it is sufficient to accelerate or slow down the speed of the electronic unit motor until the yellow or red Leds go out.

### EXAMPLE WHEN ORDERING

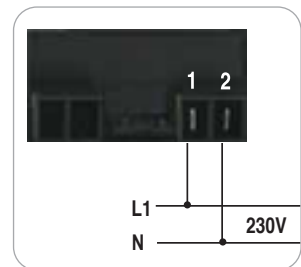
2RI36VH 230V 50Hz indicator (36x72mm) 230V input, phase-neutral connection (reading from 210 to 250V) operating frequency 50Hz input (reading from 48 to 52 Hz)

2RI36VH 400V 50Hz indicator (36x72mm) 230V input, phase-neutral connection (reading from 380 to 420V) operating frequency 50Hz input (reading from 48 to 52 Hz)



in a three phase system, the phase-neutral connection (230V) is comparable to a phase-phase connection (400V)

- **DIMENSIONS / WEIGHT (kg):** 36x72x61mm / 0,20



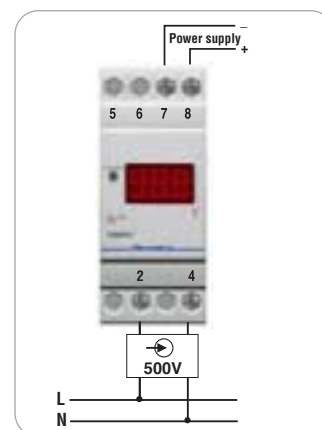
# MODULAR INSTRUMENTS - TRUE RMS VOLTMETERS

## VOLTMETERS - SOLE INPUT 500V



1RIMD2V

- Instruments suitable for AC and DC inputs
- **BURDEN** 1,5VA
- **AUXILIARY POWER SUPPLY** 230VAC ±10% standard 50/60 Hz  
For different supplies see the codes on order examples
- **FREQUENCY** 0÷100 Hz
- **CLASS** 0,5% ±2 digit referred to the end scale value
- **DISPLAY** 3 digits red colour. Digit height 10 mm
- **OVER SCALE INDICATION** frontal red led lights on
- **RANGE** 500V standard
- **DIMENSIONS** 2 DIN modules
- **ORDER EXAMPLES**
  - 1RIMD2V power supply 230VAC
  - 1RIMD2V-24 power supply 24VAC
  - 1RIMD2V110 power supply 110VAC
  - 1RIMD2V-P1 power supply 22....36VAC and 19....70VDC
  - 1RIMD2V-P2 power supply 44....130VAC and 70....240VDC



## VOLTMETERS - DOUBLE INPUT 500V or 100V



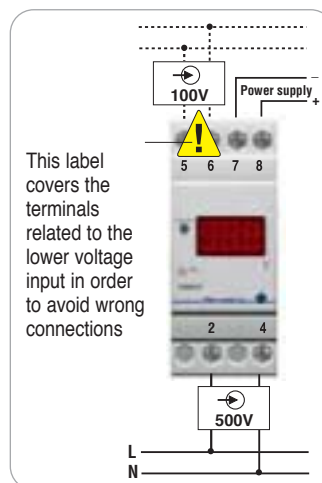
1RMD2V230

- Instruments suitable for AC and DC direct measure 500V and 100V insertion by VT (400/100V - 500/100V)
- **BURDEN** 1,5VA
- **AUXILIARY POWER SUPPLY** 230VAC ±10% standard 50/60 Hz  
For different supplies see the codes on order examples
- **FREQUENCY** 0÷100 Hz
- **CLASS** 0,5% ±2 digit referred to the end scale value
- **DISPLAY** 3 digits red colour. Digit height 10 mm
- **OVER SCALE INDICATION** frontal red led lights on
- **RANGE** 500V or 100V standard



**THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 500V input is used, it is non possible to connect the 100V terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.

- **DIMENSIONS** 2 DIN modules
- **ORDER EXAMPLES**
  - 1RMD2V230 power supply 230VAC
  - 1RMD2V-24 power supply 24VAC
  - 1RMD2V110 power supply 110VAC
  - 1RMD2V-P1 power supply 22....36VAC and 19....70VDC
  - 1RMD2V-P2 power supply 44....130VAC and 70....240VDC



This label covers the terminals related to the lower voltage input in order to avoid wrong connections

To enter in programming page, make a long pressure (4 seconds about) on the front button  
When the programming request is recognised "Set" page appears. Releasing the button all words will flash quickly, this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed ; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed. To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.

### DEFAULT PARAMETER POSSIBLE VALUES DESCRIPTION

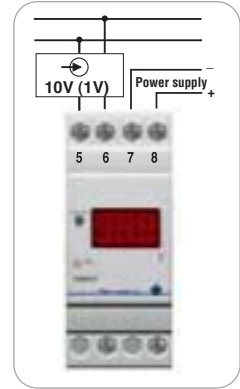
	average	VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilization. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 60.
	zeroing	VALUE from -200 and +200	In case the display (once powered and without input connection) shows a value different from zero, select this page and set the same value pushing the frontal button. Example: is display shows 002, select 2 by the frontal button. Default value 0.
			Default page selected in factory on "Adp" - <b>DON'T MODIFY IT</b>
	End scale input 100V	VALUE from 50 and 999 steps of 5V	Select the end scale value when input is from VT.../100V Default value 500.
	beginning scale	VALUE from -999 and +999	Page selected in factory on 0 value. <b>DON'T MODIFY IT</b>
	decimal point	0.00 00.0 000	Selection of decimal point. Default value 000
			Available page for AC + DC (TRMS) readings. Selected in factory on "Yes" position - <b>DON'T MODIFY IT</b>
			Available page for AC readings. Selected in factory on "No" position - <b>DON'T MODIFY IT</b>
			Available page for DC readings. Selected in factory on "No" position - <b>DON'T MODIFY IT</b>
			Available page for percentage ondulation factor (Ripple). Selected in factory on "No" position. <b>DON'T MODIFY IT</b>

## VOLTMETERS 10V or 1V



1RMD2V...

- BURDEN 1,5VA
  - AUXILIARY POWER SUPPLY 230VAC  $\pm 10\%$  standard 50/60 Hz  
*For different supplies see the codes on order examples*
  - FREQUENCY 0÷100 Hz
  - CLASS 0,5%  $\pm 2$  digit referred to the end scale value
  - DISPLAY 3 digits red colour. Digit height 10 mm
  - AC and DC RANGE 10V or 1V
- These instruments have one input only which must be specified during the order (see the examples) !**
- ORDER EXAMPLES
  - 1RMD2V101230 power supply 230VAC, input 1V
  - 1RMD2V100-24 power supply 24VAC, input 10V
  - 1RMD2V100110 power supply 110VAC, input 10V
  - 1RMD2V101-P1 power supply 22....36VAC and 19....70VDC, input 1V
  - 1RMD2V100-P2 power supply 44....130VAC and 70....240VDC, input 10V



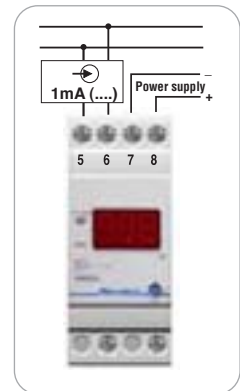
## MILLIAMMETERS

### MILLIAMMETERS 1mA / 5mA / 10mA / 20mA / 4-20mA



1RMD2T

- BURDEN 1,5VA
  - AUXILIARY POWER SUPPLY 230VAC  $\pm 10\%$  standard 50/60 Hz  
*For different supplies see the codes on order examples*
  - FREQUENCY 0÷100 Hz
  - CLASS 0,5%  $\pm 2$  digit referred to the end scale value
  - DISPLAY 3 digits red colour. Digit height 10 mm
  - RANGE
- Instruments with input 4/20mA can be calibrated in factory only.**
- These instruments have one input only which must be specified during the order (see the examples) !**
- ORDER EXAMPLES
  - 1RMD2T230020 power supply 230VAC, input 20mA
  - 1RMD2T-24420 power supply 24VAC, input 4/20mA
  - 1RMD2T110010 power supply 110VAC, input 10mA
  - 1RMD2T-P1005 power supply 22....36VAC and 19....70VDC, input 5mA
  - 1RMD2T-P2001 power supply 44....130VAC and 70....240VDC, input 1mA



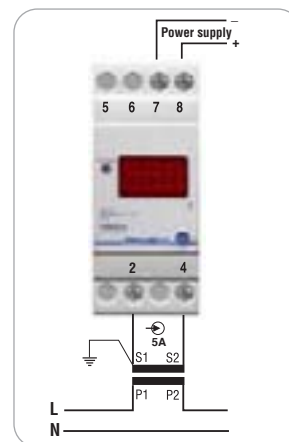
# AMMETERS

## AMMETERS - SOLE INPUT 5A



1RIMD2A

- BURDEN 0,5VA
- AUXILIARY POWER SUPPLY 230VAC ±10% standard 50/60 Hz  
For different supplies see the codes on order examples
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale value
- DISPLAY 3 digits red colour. Digit height 10 mm
- RANGE Input from 5 to 999A with 5A steps, selectable by a frontal button.  
Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted.
- DIMENSIONS 2 DIN modules
- ORDER EXAMPLES
  - 1RIMD2A power supply 230VAC
  - 1RIMD2A-24 power supply 24VAC
  - 1RIMD2A110 power supply 110VAC
  - 1RIMD2A-P1 power supply 22....36VAC and 19....70VDC
  - 1RIMD2A-P2 power supply 44....130VAC and 70....240VDC



**PROGRAMMING:** To enter in programming page, make a long pressure (4 seconds about) on the frontal button. When the programming request is recognised the 3 frontal LED will flash contemporary; this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed. The value change immediately and closed to him a flashing points appear meaning that the value is in modification phase. To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.

### DEFAULT PARAMETER POSSIBLE VALUES DESCRIPTION

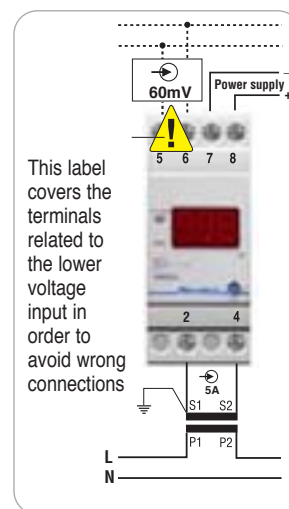
	VALUE from 5 to 999 every 5 steps	Select the ratio .../5A of the current transformer. Default value = 100
	VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilization. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 30
	VALUE from 0 to 20	In case the display (once powered and without input connection) shows a value different from zero, select this page and set the same value pushing the frontal button. Example: is display shows 002, select 2 by the frontal button. Default value 0.

## AMMETERS - DOUBLE INPUT 5A OR 60mV



1RMD2A230

- BURDEN 0,5VA
- AUXILIARY POWER SUPPLY 230VAC ±10% standard 50/60 Hz  
For different supplies see the codes on order examples
- FREQUENCY 0÷100 Hz
- CLASS 0,5% ±2 digit referred to the end scale value
- DISPLAY 3 digits red colour. Digit height 10 mm
- RANGE Input from 5 to 999A with 5A steps, selectable by a frontal button
  - Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value setted
  - Input 1A - This range is obtained multiplying the primary value of CT to use for the constant K= 5 (example: 100/1A -> K=500 max 200/1A). In this case the precision class is more higher than 0,5%.
  - Input 60mV - It is necessary to connect the shunt.../60mV correspondent to the end scale value setted
- THE CONNECTION OF THESE 2 INPUTS CANNOT BE EFFECTED CONTEMPORARY.**  
If 5A input is used, it is non possible to connect the 60mV terminals also and viceversa.  
Once the adhesive label is removed, Revalco is not responsible to damages caused by a wrong connections.
- DIMENSIONS 2 DIN modules
- ORDER EXAMPLES
  - 1RMD2A230 power supply 230VAC
  - 1RMD2A-24 power supply 24VAC
  - 1RMD2A110 power supply 110VAC
  - 1RMD2A-P1 power supply 22....36VAC and 19....70VDC
  - 1RMD2A-P2 power supply 44....130VAC and 70....240VDC










This label covers the terminals related to the lower voltage input in order to avoid wrong connections

**PROGRAMMING:** To enter in programming page, make a long pressure (4 seconds about) on the front button. When the programming request is recognised "Set" page appears. Releasing the button all words will flash quickly, this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed. To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.

### DEFAULT PARAMETER POSSIBLE VALUES DESCRIPTION

	VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilization. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 60
	VALUE from -200 to +200	In case the display (once powered and without input connection) shows a value different from zero, select this page and set the same value pushing the frontal button. Example: is display shows 002, select 2 by the frontal button. Default value 0.
		Default page selected in factory on "Adp" - <b>DON'T MODIFY IT</b>

**DEFAULT PARAMETER POSSIBLE VALUES DESCRIPTION**

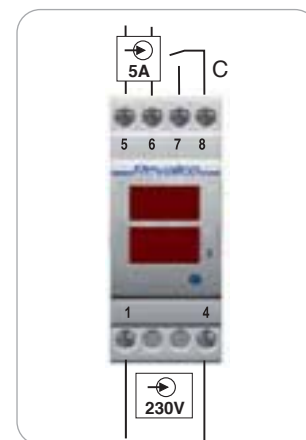
	VALUE CT sec ../5A and ../1A or shunt ../60mV from 1 to 999 every 1 step	Select the end scale value referred to the connected CT or shunts Default value 100
	VALUE from -999 to +999	Page selected in factory on 0 value. <b>DON'T MODIFY IT</b>
	0.00 00.0 000	Selection of decimal point. Default value 000
		Available page for AC + DC (TRMS) readings. Selected in factory on "Yes" position - <b>DON'T MODIFY IT</b>
		Available page for AC readings. Selected in factory on "No" position - <b>DON'T MODIFY IT</b>
		Available page for DC readings. Selected in factory on "No" position - <b>DON'T MODIFY IT</b>
		Available page for percentage ondulation factor (Ripple). Selected in factory on "No" position. <b>DON'T MODIFY IT</b>

**AMMETERS - DOUBLE THRESHOLD (MIN / MAX)**



1RSDI

- BURDEN 2VA
- AUXILIARY POWER SUPPLY 230VAC ±10% standard 50/60 Hz
- CLASS 0,5% ±2 digit referred to the end scale value
- DISPLAY 2 display 3 digits each red colour. Digit height 8 mm
- RANGE Input from 0,1 to 999A with 5A steps, selectable by a frontal button
- Input 5A - it is necessary to connect the CT ../5A correspondent to the end scale value setted
- CT RANGE from 5 to 999A with 5A steps, selectable by a frontal button
- MAXIMUM CURRENT 6A
- PERMANENT OVERLOAD 110% I<sub>nom</sub>
- THERMIC OVERLOAD (1s) 200% I<sub>max</sub>
- RELAY 1 NO contact - 250V/10A resistive load
- GALVANIC INSULATION 4kV from coil and contact
- DIMENSIONS 2 DIN modules
- FUNCTIONS measure of current in true RMS by CT../5A  
2 settable current thresholds with only one NO output relay  
settable disconnection optical prealarm.



■ Display visualization: when powered all the segments of display and LED lights on for few seconds. After that, the measure page appears.

**DESCRIPTION**



current (A)

TRMS (AC+DC) value. Decimal point is present only if the setted CT value is lower than 100.  
Dot situated in the upper right side (when lights on) shows that the output relay is active.  
When display flashes shows that threshold is "ON".

**PROGRAMMING:** To enter in programming page, make a long pressure (4 seconds about) on the front button. When the programming request is recognised the first settable parameter appears. Releasing the button all words will flash quickly, this situation will remain until the end of procedure.

After 4 seconds the pages with configuration parameters start to be displayed ; one every 4 seconds showing the actual selected value.

**If it is necessary to see the values without any modification press shortly once the button when the proper page is displayed.**





To change the values of parameters, it is enough to press the frontal button while this parameter is displayed. To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.



**IMPORTANT NOTE:**

during the programming the output relay condition IS NOT MODIFIED. The normal work restart automatically at the end of programming

**DEFAULT PARAMETER POSSIBLE VALUES DESCRIPTION**

start value		VALUE from 0 to 255	"Hi" threshold level (High trigger) It is the threshold value over which, normally, output is activated. When this value is setted in lower value than the "Lo" the functioning will change (see threshold description). Default value 0
start value		VALUE from 0 to 255	"Lo" threshold level (Low trigger) It is the threshold value under which, normally, output is activated. When this value is setted in higher value than the "Hi" the functioning will change (see threshold description). Default value 0
start value		VALUE from 0 to 255	Timer ON It is the intervention delay value (display is flashing) expressed in Seconds. Default value 1
start value		VALUE from 0 to 255	Timer OFF It is the intervention delay value (display stop to flash) expressed in Seconds. Default value 0

CT		VALUE from 5 to 999 every 5 steps	Select the ratio .../5A of the current transformer. Default value = 100
average		VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilization. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 60

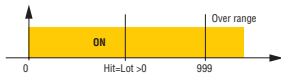
After powering the relay is not active for the first 10 seconds to permits the measure stabilization. This device measures and controls the instantaneous value of current on terminals, verifying continuously if and when the conditions to activate the relay happen according to the needed conditions. It is possible to set 2 threshold levels called "Hit" (high trigger) and "Lot" (low trigger) both from 0 to 999 (except the decimal point). It is possible to obtain the following six different possibilities:

**- Hit and Lot values = 0 (Default)**



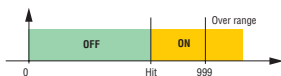
Output is constantly on rest for every current values setted (over range included)

**- Hit and Lot values equal, but different from 0.**



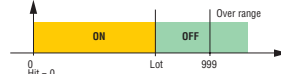
Output is constantly on rest for every current values setted (over range included). This option is useful for test or maintenance.

**- Lot = 0 and Hit > 0: MAXIMUM THRESHOLD**



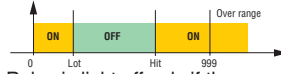
This is the classic configuration. Relay is active when the measure is HIGHER than the Hit value and return to rest when the measure become LOWER or EQUAL to Hit value.

**- Hit = 0 and Lot > 0 : MINIMUM THRESHOLD**



Relay is active when the measure is LOWER than the Lot value and return to rest when the measure become HIGHER or EQUAL to Lot value.

**- Lot value < Hit value, both higher than 0 DOUBLE THRESHOLD (OR)**



Relay is light off only if the measure is within Lot (higher or equal) and Hit (lower or equal) limits.

Relay is light on when measure is HIGHER than Hit and LOWER than Lot values.

**- Hit < Lot, both higher than 0 DOUBLE THRESHOLD (AND)**

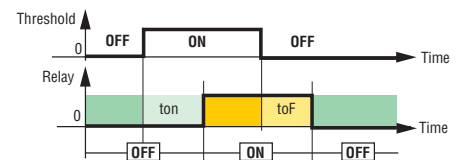


Relay is light off only if the measure is within Lot (lower) and Hit (higher) limits. Relay is light off when measure is LOWER or EQUAL than Hit and HIGHER or EQUAL than Lot values.

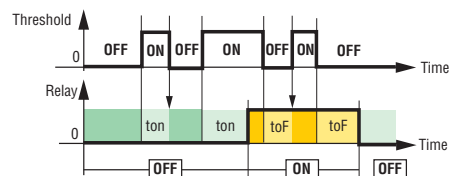
Two delay times functions are possible on the output relay (ton = Timer On, toF = Timer Off) both setttable from 0 to 999 Seconds.

This times can be used also a filter for temporary conditions wich must not cause the intervention of relay.

**1 Delay times as normal use**



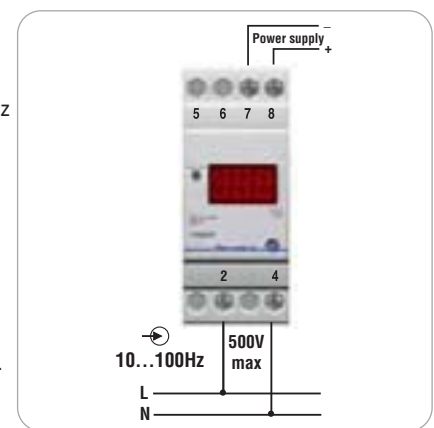
**2 Delay times as "filter"**



## FREQUENCYMETERS



	- BURDEN	2VA
	- AUXILIARY POWER SUPPLY	230VAC ±10% standard 50/60 Hz For different supplies see the codes on order examples
	- FREQUENCY	10÷100 Hz max 500V
	- CLASS	0,005% ±1 digit referred to the end scale value 45÷65Hz
	- DISPLAY	3 digits red colour. Digit height 10 mm
	- DIMENSIONS	2 DIN modules
	- ORDER EXAMPLES	
	1RIMD2F	power supply 230VAC
1RIMD2F24	power supply 24VAC	
1RIMD2F110	power supply 110VAC	
1RIMD2FP1	power supply 22...36VAC and 19...70VDC	
1RIMD2FP2	power supply 44...130VAC and 70...240VDC	



When powered all the segments of display and LED lights on for few seconds. After that, the measure page appears.



frequency

It is the frequency of the alternated voltage (sinusoidal) applied to the terminals, expresses in Hz. Decimal point is present only on the range 0-99,9 Hz. For frequence values equal or higher than 100 numbers are expressed without decimal point (the end scale led lights on).

**PROGRAMMING:** To enter in programming page, make a long pressure (4 seconds about) on the front button. When the programming request is recognised the settable parameter appear. Releasing the button all words will flash quickly, this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed ; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed. To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.

**DEFAULT PARAMETER POSSIBLE VALUES DESCRIPTION**

	average	VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilization. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 100
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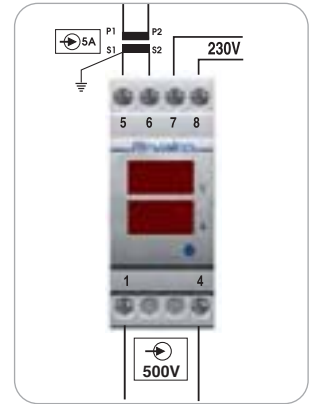
# DOUBLE SINGLE PHASE INSTRUMENTS

## VOLTMETERS + AMMETERS



1RIMD2AV

- BURDEN
  - AUXILIARY POWER SUPPLY
  - FREQUENCY
  - CLASS
  - DISPLAY
  - VOLTMETER RANGE
  - AMMETER RANGE
    - Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value
  - DIMENSIONS
  - ORDER EXAMPLES
- Ammeters 0,5VA - Voltmeters 1,5VA  
 230VAC ±10% standard 50/60 Hz  
 For different supplies see the codes on order examples  
 0÷100 Hz  
 0,5% ±2 digit referred to the end scale value  
 2 display 3 digits each red colour. Digit height 10 mm  
 500V standard  
 from 5 to 999A with 5A steps, selectable by a frontal button
- power supply 230VAC
  - power supply 24VAC
  - power supply 110VAC
  - power supply 22....36VAC and 19....70VDC
  - power supply 44....130VAC and 70....240VDC



**PROGRAMMING:** To enter in programming page, make a long pressure (4 seconds about) on the frontal button

When the programming request is recognised the 3 frontal LED will flash contemporary; this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed ; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed.

The value change immediately and closed to him a flashing points appear meaning that the value is in modification phase.

To fast forward maintain pressure on the frontal button. The value is automatically saved in permanent way when the automatic display of the pages starts again.

### DEFAULT PARAMETER POSSIBLE VALUES DESCRIPTION

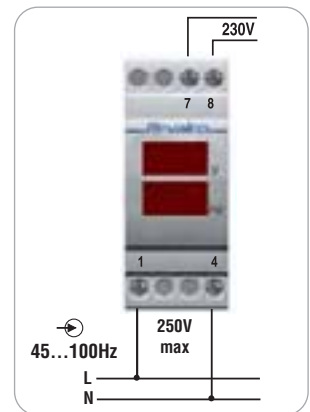
DEFAULT PARAMETER	POSSIBLE VALUES	DESCRIPTION
 trasformatore di corrente sec. 5A	VALUE from 5 to 999 every 5 steps	Select the ratio .../5A of the current transformer. Decimal point is automatically selected, and up to 100A the display shows 00.0; from 100A to 999A it shows 000. Default value = 100
 voltage	VALUE 500	Voltage page with 500V setted in factory. <b>ABSOLUTELY DON'T MODIFY IT</b>
 average	VALUE from 1 to 255	It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilization. The numbering rise up from 1 to 255; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters. Default value 30
 zeroing	VALUE from 0 to 20	In case the display (once powered and without input connection) shows a value different from zero, select this page and set the same value pushing the frontal button. Example: is display shows 002, select 2 by the frontal button. Default value 0.

## VOLTMETERS + FREQUENCYMETERS



1RIMD2VF250\_...

- BURDEN
  - AUXILIARY POWER SUPPLY
  - FREQUENCY
  - CLASS
  - DISPLAY
  - INPUT
  - DIMENSIONS
  - ORDER EXAMPLES
- Ammeters 0,5VA - Voltmeters 1,5VA  
 230VAC ±10% standard 50/60 Hz  
 For different supplies see the codes on order examples  
 45÷100 Hz  
 0,5% ±2 digit referred to the end scale value  
 2 display 3 digits each red colour. Digit height 10 mm  
 250V max  
 2 DIN modules
- power supply 230VAC
  - power supply 24VAC
  - power supply 110VAC
  - power supply 22....36VAC and 19....70VDC
  - power supply 44....130VAC and 70....240VDC



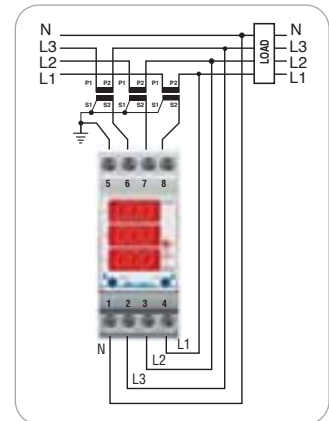
# DOUBLE THREE PHASE INSTRUMENTS

## VOLTMETERS + AMMETERS



1RIMD23AV

- BURDEN
  - Self supplied instruments
  - CLASS
  - DISPLAY
  - AMMETER RANGE
    - Input 5A - it is necessary to connect the CT .../5A correspondent to the end scale value
  - VOLTMETER RANGE (phase-neutral) 290V max
  - VOLTMETER RANGE (phase-phase) 500V max
  - DIMENSIONS
- Ammeters 0,5VA - Voltmeters 1,5VA
- 0,5% ±2 digit referred to the end scale value
- 3 display 3 digits each red colour. Digit height 7 mm
- from 5 to 999A with 5A steps, selectable by a frontal button



Measurements displaying:  
the measurements and signalling pages which appear (pushing and releasing the frontal button) are the following

PUSHED BUTTON	RELEASED	DESCRIPTION
<p>phase-phase voltages</p>		<p>Voltage measure (V) First upper led lights-on</p> <p>If (near every phase voltage value)the points on the right side of display light-on, it means that the sequence of the phases is WRONG</p>
<p>phase-neutral voltages</p>		<p>Voltage measure (V) Central led lights-on</p> <p>If (near every phase-neutral voltage value)the points on the right side of display light-on, it means that the sequence of the phases is WRONG</p>
<p>phase currents</p>		<p>current measure (A) Last downer led lights on</p>

**PROGRAMMING:** To enter in programming page, make a long pressure (4 seconds about) on the frontal button

When the programming request is recognised the 3 frontal LED will flash contemporary; this situation will remain until the end of procedure. After 4 seconds the pages with configuration parameters start to be displayed ; one every 4 seconds showing the actual selected value. If it is necessary to see the values without any modification don't touch nothing until the automatic end of the showed pages. To change the values of parameters, it is enough to press the frontal button while this parameter is displayed.

The value change immediately and closed to him a flashing points appear meaning that the value is in modification phase.

To fast forward maintain pressure on the frontal button.

The value is automatically saved in permanent way when the automatic display of the pages starts again.

The following can be made by pressing the buttons:

1. Pressed during the automatic display of the pages, it increases the time you stay on this page until it is released.
2. Pressed during the setting of some value (when all the points on the right flashes) decrease step by step this value and it increases the time you stay on this page until it is released.
3. Pressing contemporary the buttons values increase one step each time without fast forward possibility

DEFAULT PARAMETER	POSSIBLE VALUES	DESCRIPTION
<p>CT .../5A</p>	<p>VALUE from 5 to 999 every 5 steps</p>	<p>Select the ratio .../5A of the current transformer. Decimal point is automatically selected, and up to 10A the display shows 0.00; from 10A to 100A it shows 00.0; from 105A to 999A it shows 000</p> <p>Default value = 100</p>
<p>average</p>	<p>VALUE from 1 to 15</p>	<p>It is the number (n) of single measures effected on the electrical parameter before it's visualization on the display. Practically it is the filter of the measure stabilization. The numbering rise up from 1 to 15; more higher is the selected number, more slow are the eventual variations of reading. This is valid for all the measured parameters.</p> <p>Default value = 3</p>