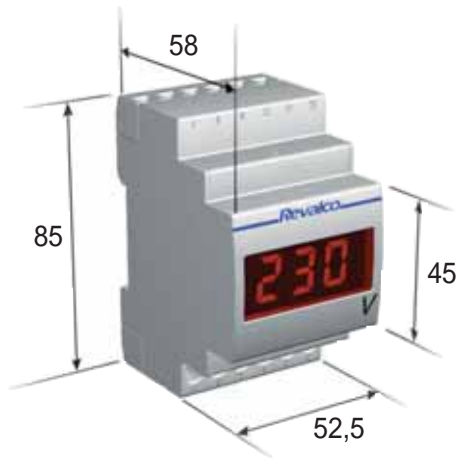


# DIGITAL INSTRUMENTS

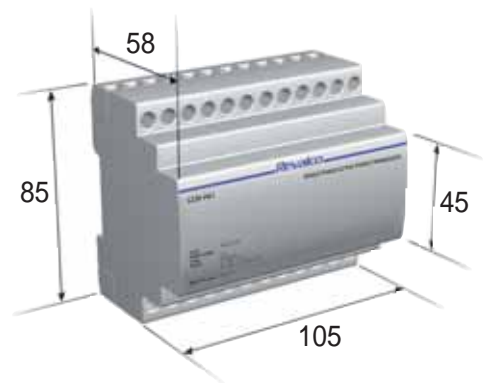


## DIMENSIONS in mm



- The 52.5 mm dimensions correspond to 3 DIN modules (17.5 mm each)
- Weight: 0,22 Kg

## EXTERNAL TRANSDUCER



- The 105 mm dimensions correspond to 6 DIN modules (17.5 mm each)
- Weight: 0,45 Kg

## CALIBRATION OF END SCALE VALUE

### This calibration must be effected in absence of voltage

- Access to minidip as show in figure.



- In order to obtain the desired scale, shift the commutators of the minidip as described in the examples below.

15 A	25 A	40 A	60 A																																																																
<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td>■</td><td></td><td></td><td>■</td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF	■			■	ON	1	2	3	4	5	6	<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td>■</td><td></td><td></td><td>■</td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF	■			■	ON	1	2	3	4	5	6	<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td></td><td>■</td><td></td><td>■</td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF		■		■	ON	1	2	3	4	5	6	<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td></td><td></td><td>■</td><td>■</td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF			■	■	ON	1	2	3	4	5	6
□	□	□	□	OFF																																																															
■			■	ON																																																															
1	2	3	4	5	6																																																														
□	□	□	□	OFF																																																															
■			■	ON																																																															
1	2	3	4	5	6																																																														
□	□	□	□	OFF																																																															
	■		■	ON																																																															
1	2	3	4	5	6																																																														
□	□	□	□	OFF																																																															
		■	■	ON																																																															
1	2	3	4	5	6																																																														
99,9 A	150 A	250 A																																																																	
<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td></td><td></td><td>■</td><td>■</td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF			■	■	ON	1	2	3	4	5	6	<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td>■</td><td></td><td></td><td></td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF	■				ON	1	2	3	4	5	6	<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td></td><td>■</td><td></td><td></td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF		■			ON	1	2	3	4	5	6																	
□	□	□	□	OFF																																																															
		■	■	ON																																																															
1	2	3	4	5	6																																																														
□	□	□	□	OFF																																																															
■				ON																																																															
1	2	3	4	5	6																																																														
□	□	□	□	OFF																																																															
	■			ON																																																															
1	2	3	4	5	6																																																														
400 A	600 A	999 A																																																																	
<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td></td><td>■</td><td></td><td></td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF		■			ON	1	2	3	4	5	6	<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td></td><td></td><td>■</td><td></td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF			■		ON	1	2	3	4	5	6	<table border="1"> <tr><td>□</td><td>□</td><td>□</td><td>□</td><td>OFF</td></tr> <tr><td></td><td></td><td></td><td>■</td><td>ON</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table>	□	□	□	□	OFF				■	ON	1	2	3	4	5	6																	
□	□	□	□	OFF																																																															
	■			ON																																																															
1	2	3	4	5	6																																																														
□	□	□	□	OFF																																																															
		■		ON																																																															
1	2	3	4	5	6																																																														
□	□	□	□	OFF																																																															
			■	ON																																																															
1	2	3	4	5	6																																																														

NOTE: The (.../5A) current transformers and (.../60mV) shunts must have the primary current equal to the value of capacity predisposed on the instrument.

## POWER SUPPLIES

- AC auxiliary power supplies can be the following:
- DC auxiliary power supplies can be the following:

24V – 110V – 230V (standard)  
 12VDC (range from 10 to 15VDC)  
 24VDC (range from 20 to 28VDC)  
 48VDC (range from 40 to 60VDC)  
 110VDC (range from 90 to 150VDC)



**1RIMD2AV**

- BURDEN
- FREQUENCY
- ACCURACY
- DISPLAY
- POWER SUPPLY
  
- OPERATING TEMPERATURE
- AMMETER CAPACITIES
  - Input 5A
  
- VOLTMETER CAPACITY
- Different capacities on request.
- DIMENSIONS
- For the connection diagram see page 21

Ammeters 0,5VA - Voltmeters 1,5VA  
 45 ÷ 100 Hz  
 Class 0,5% ±1 digit referred to the end scale  
 2 displays, 3 red digits each. Led height 13mm  
 galvanically insulated, 230V/50Hz ±10%  
 (different supplies on request)  
 -5 °C ÷ +55 °C  
 between 5 and 999A, 5A each step selectable by the frontal button  
 It is important to use the C.T. .../5A with a primary rating  
 corresponding to the previously chosen scale  
 600V standard  
 2 DIN modules

**CT selection**



- Make a long pressure (4 seconds about) on the button.

The following page appears:



After 4 seconds the pages with configuration parameters start to be displayed; one page 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 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 button. The modified value is automatically saved in permanent way when the automatic display of the pages starts again.

DEFAULT PARAMETER	POSSIBLE VALUES	DESCRIPTION
 <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> $MEASURE = \frac{\sum_{i=1}^n Measure (n)}{n}$
 <p>CT .../5A</p>	<p>VALUE from 5 to 999 every 5 steps</p>	<p>Select the ratio .../5A of the current transformer.</p>



- 1RIMDA - 1RIMDV**
- BURDEN
  - FREQUENCY
  - ACCURACY
  - DISPLAY
  - POWER SUPPLY
  
  - OPERATING TEMPERATURE
  - OVER SCALE INDICATION
  - AMMETER CAPACITIES
    - Input 5A
  
  - VOLTMETERS CAPACITIES
  - Different capacities on request.
  - DIMENSIONS
  - EXAMPLES WHEN ORDERING
  - 1RIMDV 230V
  - 1RIMDA 230V
  - For the connection diagram see page 21

Ammeters 0,5VA - Voltmeters 1,5VA  
 15 ÷ 100 Hz  
 Class 0,5% ±1 digit referred to the scale  
 3 red digit display. Led height 13 mm  
 galvanically insulated, 230V/50Hz ±10%  
 (different supplies on request)  
 -10 °C ÷ +55 °C  
**red** led over 999A  
 15-25-40-60-99,9-150-250-400-600-999A  
 The instruments are designed for selecting the above-mentioned capacities, by activating the incorporated minidip.  
 It is important to use the C.T. .../5A transformer with a primary rating corresponding to the previously chosen scale.  
 600V standard  
 3 DIN modules  
 voltmeter with 230V supply, end scale 600V  
 multiscale ammeter with 230V supply

**1RIMDA.25**

- BURDEN 0,5VA
- FREQUENCY 15 ÷ 100 Hz
- ACCURACY Class 0,5% ±1 digit referred to the end scale
- DISPLAY 3 red digit display. Led height 13 mm
- POWER SUPPLY galvanically insulated, 230V/50Hz ±10% (different supplies on request)
- OPERATING TEMPERATURE -10 °C ÷ +55 °C
- OVER SCALE INDICATION **red** led over 999A
- AMMETER CAPACITY 25A
- DIMENSIONS 3 DIN modules
- EXAMPLES WHEN ORDERING
  - 1RIMDA.25 digital ammeter aux supply 230V
  - 1RIMDA.25 48C digital ammeter aux supply 48VDC
- For the connection diagram see page 21

## D. C. MULTISCALE INSTRUMENTS

**1RCMDA - 1RCMDV**

- BURDEN Ammeters 0,5VA - Voltmeters 1,5VA
- FREQUENCY 15 ÷ 100 Hz
- ACCURACY Class 0,5% ±1 digit referred to the end scale
- DISPLAY 3 red digit display. Led height 13 mm
- POWER SUPPLY galvanically insulated, 230V/50Hz ±10% (different supplies on request)
- OPERATING TEMPERATURE -10 °C ÷ +55 °C
- OVER SCALE INDICATION **red** led over 999A
- NEGATIVE CURRENT AND VOLTAGE **green** led
- MILLIAMMETER CAPACITIES 1mA - 20mA - 4/20mA
- AMMETER CAPACITIES 15-25-40-60-99,9-150-250-400-600-999A
- The instruments are designed for selecting the above mentioned capacities, by activating the incorporated minidip
- Input **60mV** It is important to use the .../60mV shunt with a primary rating corresponding to the previously chosen scale
- VOLTMETERS CAPACITIES 0-600V
- Different capacities on request.
- DIMENSIONS 3 DIN modules
- EXAMPLES WHEN ORDERING
  - 1RCMDV 230V Voltmeter with 230V supply, end scale 600V
  - 1RCMDA 24V CC Multiscale ammeter with 24V D.C. supply
- For the connection diagram see page 21

## FREQUENCYMETERS

**1RIMDF**

- BURDEN 0,5 VA
- ACCURACY Class 0,5% ±1 digit referred to the end scale
- DISPLAY 3 red digit display. Led height 13 mm
- POWER SUPPLY galvanically insulated, 230V/50Hz ±10% (different supplies on request)
- OPERATING TEMPERATURE -10 °C ÷ +55 °C
- STANDARD CAPACITIES 40÷80Hz
- INPUT SIGNAL from 50 to 600V
- DIMENSIONS 3 DIN modules
- EXAMPLE WHEN ORDERING
  - 1RIMDF 230V digital frequency meter with 230V supply
- For the connection diagram see page 21

## TACHOMETER INDICATORS

**1RCTMD.A - RCTMD.D**

- Instruments with incorporated potentiometer for tacho generator (V DC) or tacho alternator (V AC) connection
- BURDEN 600µA
- ACCURACY Class 1% ±1 digit referred to scale
- DISPLAY 3 red digit display. Led height 13 mm
- POWER SUPPLY galvanically insulated, 230V/50Hz ±10% (different supplies on request)
- OPERATING TEMPERATURE -10°C ÷ +55°C
- OVER SCALE INDICATION **red** led over 999
- DIMENSIONS 3 DIN modules
- EXAMPLES WHEN ORDERING
  - 1RCTMD.D 10V 500g/min indicator for tacho generator for which 500 RPM corresponds to 10V D.C. input
  - 1RCTMD.A 80V 800m/min indicator for tacho alternator for which 800 meters per minute correspond to 80VAC input
- When ordering please indicate full scales, unit of measurement, input voltage and the number of revolutions.
- For the connection diagram see page 21

## SINGLE PHASE, ACTIVE POWER WATTMETERS



### 1RIMD.W130 - DIRECT INPUT 30A 1RIMD.W15 - INPUT BY MEANS OF C.T.

<ul style="list-style-type: none"> <li>■ BURDEN</li> <li>■ FREQUENCY</li> <li>■ POWER SUPPLY</li> <li>■ ACCURACY</li> <li>■ DISPLAY</li> <li>■ TEMPERATURES</li> <li>■ RESOLUTION</li> <li>■ MINIMUM OPERATING CURRENT</li> <li>■ NOMINAL CURRENT</li> <li>■ MAXIMUM CURRENT</li> <li>■ PRIMARY CURRENT</li> <li>■ DISPLAY</li> <li>■ SECONDARY CURRENT</li> <li>■ DIMENSIONS</li> <li>■ WEIGHT Kg.</li> <li>■ For the connection diagram see page 21</li> </ul>	<p>admitted overcurrent</p>	<p>26A (6kW) 30A 5 In for 0,5 sec</p>	<p>9,999 kW</p>	<p>1RIMD.W130   1RIMD.W15</p> <p>&lt; 4 VA 40 ÷ 60 Hz 230V ± 10% selfpowered Class 1,5 4 red digits display. Heigh of display 10mm operating 0°C ÷ +50°C / storage -25°C ÷ +70°C 0,01 kW 0,05A (11,5W)</p> <p>60-100-150-250-400-600-1000 A selection of the range by an incorporated minidip To each primary current corresponds a different end scale value with an automatic reposition of the decimal point: 60 A = 9,999 kW 100-150-250-400 A = 99,99 kW 600-1000 A = 999,9 kW 5 A</p> <p>3 DIN modules 0,200</p>
--	-----------------------------	---	-----------------	--

## A.C. MULTISCALE WATTMETERS AND VARMETERS



### 1RCMD + 1CORPA1/2/3/4/5 (1CORPR1/2/3/4/5)

- These instruments are made up of a 1mA direct current indicator (RCMD), an external accessory (COR PA/CORPR).
- The possible systems are as follows  
1RCMD + 1CORPA1 (1CORPR1) single-phase Wattmeter (Varmeter)  
1RCMD + 1CORPA2 (1CORPR2) three-phase balanced Wattmeter (Varmeter) without neutral, 3 wires  
1RCMD + 1CORPA3 (1CORPR3) three-phase unbalanced Wattmeter (Varmeter) without neutral, 3 wires (ARON)  
1RCMD + 1CORPA4 (1CORPR4) three-phase balanced Wattmeter (Varmeter) with neutral, 4 wires  
1RCMD + 1CORPA5 (1CORPR5) three-phase unbalanced Wattmeter (Varmeter) with neutral, 4 wires  
the end scales are linear with values expressed in (W), Kilowatt (kW), Megawatt (MW), Var (var), Kilovar (kvar), Megavar (MVAR)

#### ■ TECHNICAL DATA

<p>1RCMD see page 19</p> <p>3 DIN modules</p>	<p>1CORPA1/2/3/4/5 - 1CORPR1/2/3/4/5</p> <ul style="list-style-type: none"> <li>- Voltages input 230V standard in single-phase system 400V standard in three-phase system</li> <li>- Current input 5A (1A in types 1CORPA..B - 1CORPR..B)</li> <li>- Resistance input &lt; 50 mohm</li> <li>- Overloading 2 In / 1,2 Un permanent 10 In / 2 Un for 1 second</li> <li>- Insulation voltage 2kV</li> <li>- Accuracy Class 0,5</li> <li>- Frequency 50÷60Hz</li> <li>- Operating temperature 0÷40 °C</li> <li>- Current output 1mA</li> <li>- Load output 700 ohm</li> <li>- Dimensions: see page 17</li> </ul>
---	--

#### ■ INDICATIONS NECESSARY FOR ORDERING

- Type of current single-phase; three-phase with or without neutral; balanced or unbalanced system; 3 or 4 wires
- Voltage between phases; between phase and neutral. If the voltage transformer is used, please indicate the primary and secondary value.
- Current max 5A for direct input. If a current transformer is used please indicate the primary and secondary value. (the C.T. should however be in class 0,5)
- Desired scale value

#### ■ EXAMPLE WHEN ORDERING

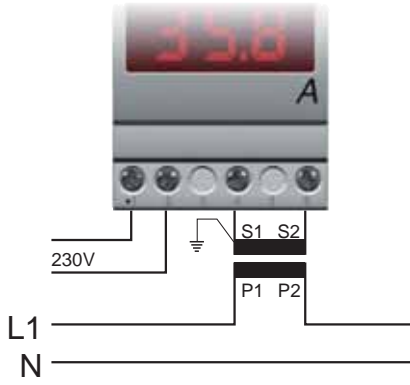
1RCMD + 1CORPA3 400V 100/5A 80 kW  
threephase Wattmeter, unbalanced, without neutral, 3 wires (ARON) for voltage direct input at 400V, ampere input by means of 100A/5A current transformer and 80KW scale.

- For the connection diagram see pages 15 and 16

# CONNECTION DIAGRAMS FOR DIGITAL INSTRUMENTS

## 1RIMDA

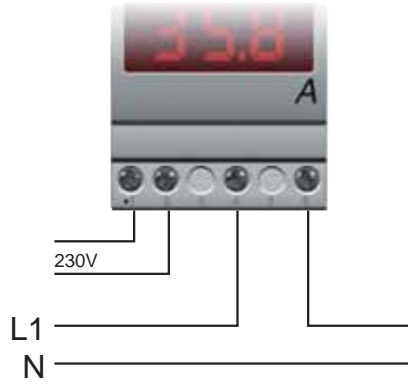
AC Ammeters



input by means of a C.T.

## 1RIMDA.25

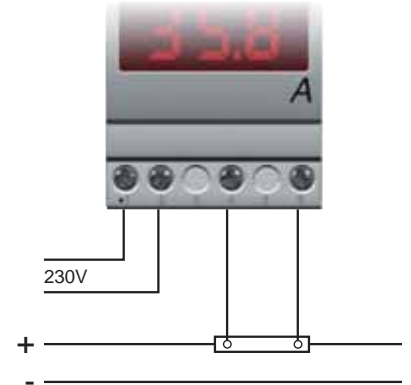
AC Ammeters



direct insertion

## 1RCMDA

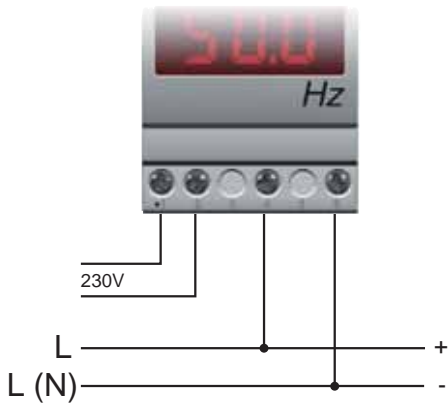
DC Ammeters



input by means of a shunt

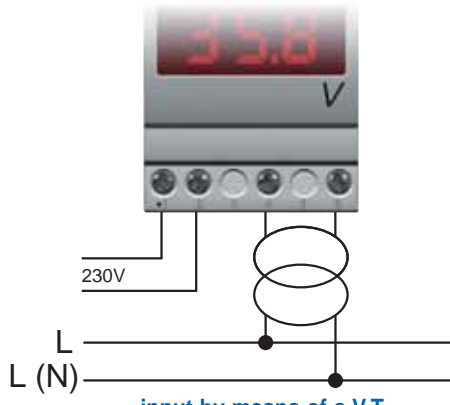
## 1RIMDV - 1RCMDV - 1RIMDF

- AC Voltmeter (1RIMDV)
- DC Voltmeter (1RCMDV)
- Frequency meters (1RIMDF)



## 1RIMDV

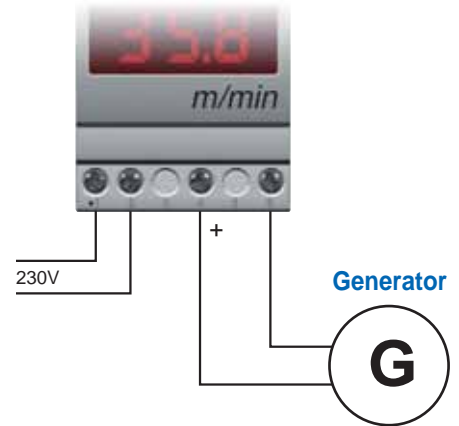
AC Voltmeter



input by means of a V.T.

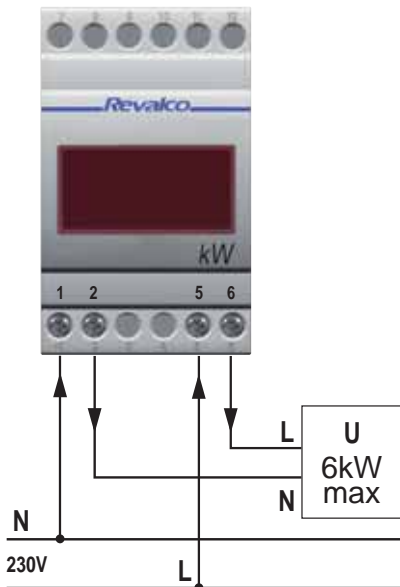
## 1RTCMD A / D

Tacho indicators



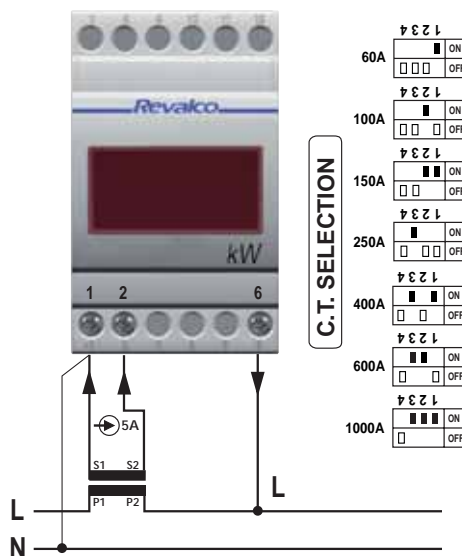
## 1RIMD.W130

Single phase, Active Power Wattmeter direct input 30A



## 1RIMD.W15

Single phase, Active Power Wattmeter input by means of a C.T.



**C.T. SELECTION**

60A	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
100A	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
150A	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
250A	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
400A	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
600A	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
1000A	<input type="checkbox"/> ON	<input type="checkbox"/> OFF

## 1RIMD2AV

A.C. Double Voltmeter / Ammeters

