

LED INDICATORS



GENERAL DESCRIPTIONS

- 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 20th 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.

VISUALIZATION OF CURRENT, VOLTAGE AND FREQUENCY

- 230V voltage reading**
 - 2RI36AVHZ 40A** End scale 40A, connection by means of CT 40/5A
 - 2RI36AVHZ 50A** End scale 50A, connection by means of CT 50/5A
 - 2RI36AVHZ 60A** End scale 60A, connection by means of CT 60/5A
 - 2RI36AVHZ 80A** End scale 80A, connection by means of CT 80/5A
 - 2RI36AVHZ 100A** End scale 100A, connection by means of CT 100/5A

- 400V voltage reading (referred to 230VAC auxiliary supply)**
 - 2RI36AVHZ 40A 400** End scale 40A, connection by means of CT 40/5A
 - 2RI36AVHZ 50A 400** End scale 50A, connection by means of CT 50/5A
 - 2RI36AVHZ 60A 400** End scale 60A, connection by means of CT 60/5A
 - 2RI36AVHZ 80A 400** End scale 80A, connection by means of CT 80/5A
 - 2RI36AVHZ 100A 400** End scale 100A, connection by means of CT 100/5A

VISUALIZATION OF VOLTAGE AND FREQUENCY

- 2RI36VHZ**

VISUALIZATION OF CURRENT, VOLTAGE, FREQUENCY AND HOURMETER FUNCTION

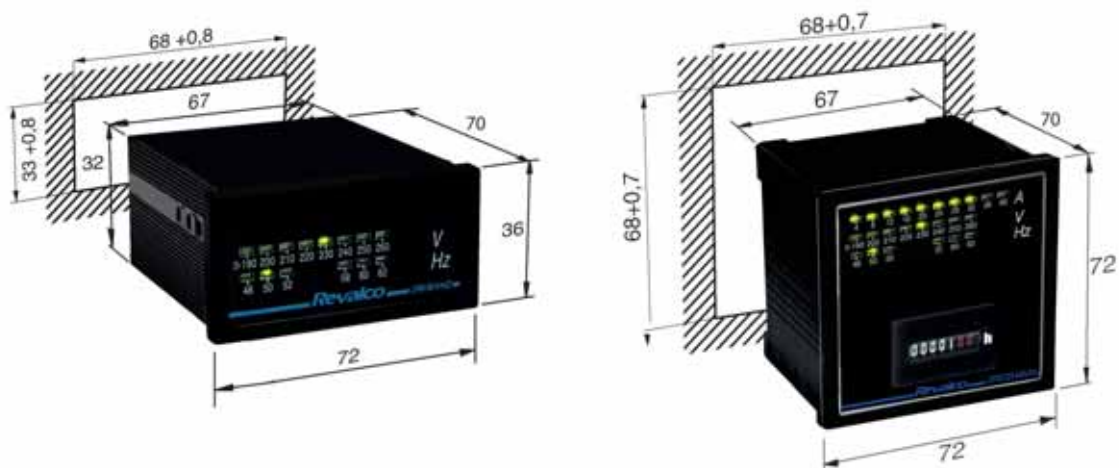
- 230V voltage reading**
 - 2RI72HAVH 40A** End scale 40A, connection by means of CT 40/5A
 - 2RI72HAVH 50A** End scale 50A, connection by means of CT 50/5A
 - 2RI72HAVH 60A** End scale 60A, connection by means of CT 60/5A
 - 2RI72HAVH 80A** End scale 80A, connection by means of CT 80/5A
 - 2RI72HAVH 100A** End scale 100A, connection by means of CT 100/5A

- 400V voltage reading (referred to 230VAC auxiliary supply)**
 - 2RI72HAVH 40A 400** End scale 40A, connection by means of CT 40/5A
 - 2RI72HAVH 50A 400** End scale 50A, connection by means of CT 50/5A
 - 2RI72HAVH 60A 400** End scale 60A, connection by means of CT 60/5A
 - 2RI72HAVH 80A 400** End scale 80A, connection by means of CT 80/5A
 - 2RI72HAVH 100A 400** 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

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

DIMENSIONS in mm



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 2M Ω L-N

Input ammeter circuit

- nominal current Current 5 A
- permanent overload 120%
- thermic overload (1 s) 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: 50/60Hz (automatic)
- range 48...52 Hz and 58...62 Hz
- response time <300ms

Compatible current transformers

- nominal current 5 A

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

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**. See the technical characteristics on catalogue page 157.

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

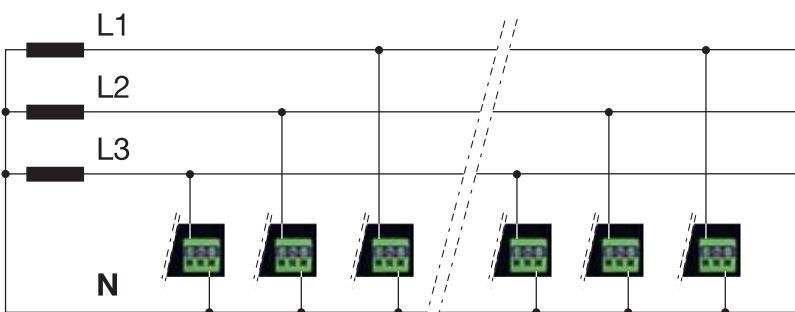
Direct measurement in Volt -> Single led light-on

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

CONNECTION DIAGRAMS



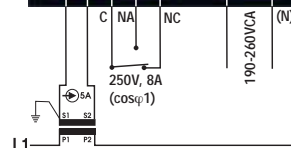
2RI36AVHZ 40A - 2RI36VHZ
2RI72HAVH 40A

2RI36AVHZ 40A 400 - 2RI36VHZ 400
2RI72HAVH 40A 400

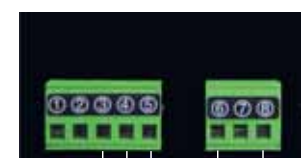


Instrument measures phase-neutral voltage **only (230V)**.
The same instrument can show the measure of 400V
(model 2RI36...400 and 2RI72HAVH...400), but in any case the
connection must be linked to 230V ($230V \times \sqrt{3} = 400V$)

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



- VOLTAGE AND FREQUENCY:
2RI36VHZ



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