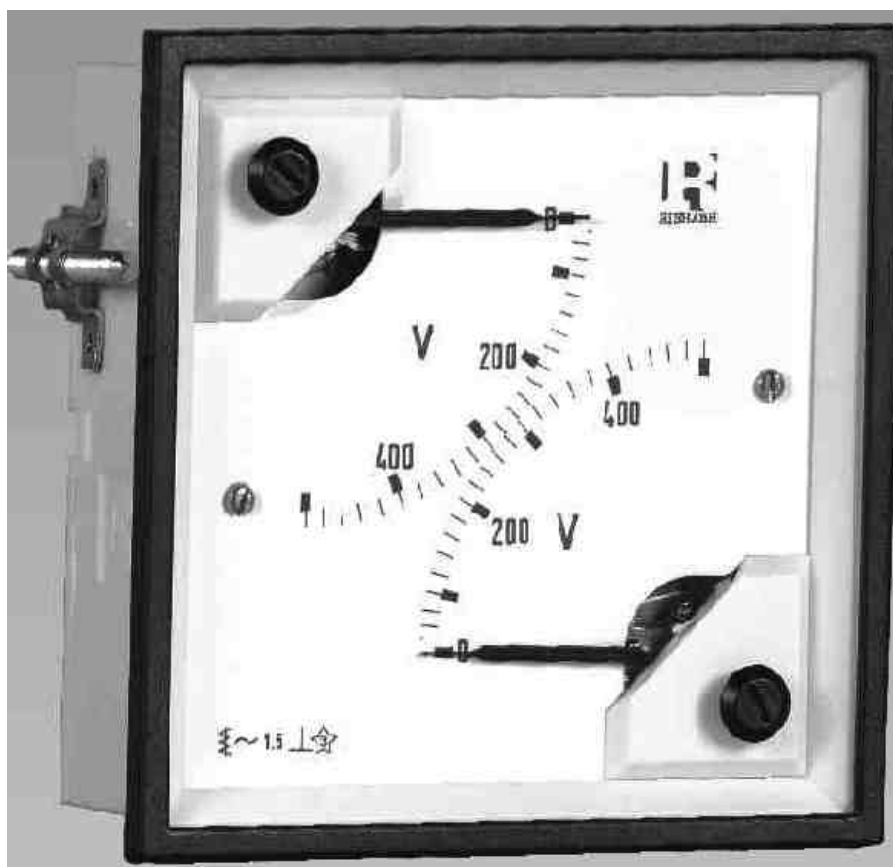


## 2 IN 1 MOVING COIL MOVEMENT METER PQ - 96

Two in One  
PQ - 96

### Data Sheet

PQ 96 2 in 1 Analogue Meters  
With Moving Coil Movement



## Application

The moving coil panel meters, 2 in 1 PQ housed in moulded polycarbonate cases are suitable for the measurement of DC currents and voltages.

These instruments offer several advantages in switchboards and Generating Set Panels. Number of meters can be mounted in a Panel Cut out (Mosaic mounting). Front glass, Bezel & Dial can be easily replaced.

## Features

- Two different meters in one case.
- Linear scale.
- Glass filled polycarbonate housing(UL 94 V-0).
- Knife edge pointer
- Easily replaceable glass & bezel.

## Movement

Moving coil movement has pivots of very high hardness. Movement is suspended between two spring loaded sapphire jewels. Movement is properly shielded & critically damped by eddy currents induced in coil former.

## Specifications

### Mechanical Data

<b>Case details</b>	: Moulded square case suitable for mounting in Control / Switchgear panels, Machinery consoles.
<b>Case material</b>	: Polycarbonate, flame retardant and drip proof as per UL 94 V-0.
<b>Front facia</b>	: Glass
<b>Colour of bazel</b>	: Black
<b>Position of use</b>	: Vertical
<b>Panel fixing</b>	: Mounting Clamps
<b>Mounting</b>	: Stackable in a single cutout
<b>Panel thickness</b>	: □ 25 mm
<b>Terminals</b>	
<b>Voltmeters and ammeters &lt;5A</b>	: Hexagon studs, M4 screws and wire clamps E3
<b>Ammeters ≥5A</b>	: Threaded studs M6 with nuts

### Electrical Data

<b>Measured quantity</b>	: DC voltage or current
<b>Overload capacity</b>	: (acc. to IS: 1248 / IEC 51)
<b>Continuously</b>	: 1.2 times rated voltage / current
<b>Short duration</b>	
<b>Voltmeters</b>	: 2 times for 0.5 sec : 9 overloads 2 times for 5 sec : 1 overloads
<b>Ammeters</b>	: 10 times for 0.5 sec : 9 overloads 10 times for 5 sec : 1 overload
<b>Enclosure code (IEC 529)</b>	: IP 52 case cover IP 00 for terminals without back IP 20 for terminals with back cover
<b>Insulation class</b>	: Group A according to VDE 0110
<b>Rated insulation voltage</b>	: PQ 96 : 1000V
<b>Proof Voltage</b>	: 3KV
<b>Installation category</b>	: 600 V CAT III (IEC 1010)
<b>Insulation resistance</b>	: > 50 Mohmat 500 V d.c.

### Burden :

Connection to shunt	Power Consumption : 6 mA Lead resistance : 0.06 □	± 10%
1A ... 40 A	Voltage drop : 60 mV	± 10%
≥ 1V	1000 □/V	± 5%

## Standard Measuring Ranges

D. C. Current		D. C. Voltage	
Rated Value	Approx Voltage drop	Rated Value	Sensitivity (± 10%)
100 uA	400 mV	40 mV	3.33kohm/V
150 uA	600 mV	50 mV	3.33kohm/V
250 uA	140 mV	60 mV	1 kohm/V
400 uA	540 mV	75 mV	1 kohm/V
500 uA	540 mV	100 mV	1 kohm/V
600 uA	540 mV	150 mV	1 kohm/V
1 mA	37 mV	250 mV	1 kohm/V
1.5 mA	196 mV	400 mV	1 kohm/V
2.5 mA	196 mV	600 mV	1 kohm/V
4 mA	196 mV	1 V	1 kohm/V
5 mA	196 mV	1.5 V	1 kohm/V
6 mA	196 mV	2.5 V	1 kohm/V
10 mA	196 mV	4 V	1 kohm/V
15 mA	11 mV	6 V	1 kohm/V
20 mA	60 mV	10 V	1 kohm/V
25 mA	60 mV	15 V	1 kohm/V
40 mA	60 mV	25 V	1 kohm/V
60 mA	60 mV	30 V	1 kohm/V
100 mA	60 mV	40 V	1 Kohm/V
150 mA	60 mV	50 V	1 kohm/V
250 mA	60 mV	60 V	1 kohm/V
400 mA	60 mV	100 V	1 kohm/V
600 mA	60 mV	150 V	1 kohm/V
1 A	60 mV	200 V	1 kohm/V
1.5 A	60 mV	250 V	1 kohm/V
2.5 A	60 mV	300 V	1 kohm/V
4 A	60 mV	400 V	1 kohm/V
5 A	60 mV	500 V	1 kohm/V
6 A	72 mV	600 V	1 kohm/V
10 A	60 mV	1000 V	1 kohm/V
15 A	60 mV	For use on external shunt	
20 A	60 mV		
25 A	60 mV		
30 A	60 mV	60 mV	1 kohm/V
For use on transducer	60 mV	75 mV	1 kohm/V
4-20 mA	60 mV	150 mV	1 kohm/V

Any combination  
Ammeter / Ammeter  
Voltmeter / Voltmeter  
Ammeter / Voltmeter

In case of Ammeter / Ammeter 1 meter could be upto 30A but 2nd one will be only upto 1A

Non-Standard ranges available on request.

### Accuracy at Reference Conditions

Accuracy class : 1.5 according to IS: 1248 (IEC 51/ DIN EN 60051)

### Reference conditions

Ambient temperature : 23°C ± 2°C  
Position of use : Nominal position ± 1°  
Input : Rated value of measured quantity  
Other conditions : IS : 1248 (IEC 51/ DIN EN 60051)  
**Nominal range of use**  
Ambient temperature : 0...50°C  
Position of use : Vertical ± 5°  
External magnetic field : At 0.4KA/m

### Scale and Pointer

Pointer : Knife - edge pointer  
Pointer deflection : 0...90°  
Scale characteristics : linear  
Scale division : Coarse - fine  
Scale length : 54mm

### Environmental Conditions

**Climatic suitability** : Climate category II as per IS : 1248 (climatic class 3 according to VDE/VDI 3540)  
**Operating temperature** : - 10... + 55°C  
**Storage temperature** : - 25... + 65°C  
**Relative humidity** : ≤ 75% annual average, non-condensing  
**Shock resistance** : 15g<sub>n</sub> for pulse duration 11 ms  
**Vibration resistance** : 10-55-10Hz for ampli. 0.15mm (1.5 g at 50Hz)  
**Pollution degree** : 2

## Options

<b>Case</b>	
<b>Front facia</b>	: Antiglare glass
<b>Colour of bezel</b>	: Red, Yellow, Blue, White.
<b>Red index pointer</b>	: Front adjustable on site
<b>Position of use</b>	: on request 0°...180°
<b>Dial</b>	
<b>Blank dial</b>	: With initial and end values marked.
<b>Special markings</b>	: Numbering / Lettering.
<b>Division dials</b>	: Basic divisions without numbering.
<b>Colour markings/bands</b>	: Red or green

## Others

<b>Zero position</b>	: Centre zero or off-set zero
<b>Increased sensitivity</b>	: 4kohm/V for voltmeters 1...600V 10 kohm/V for Voltmeters 15..150V
<b>Adjustment of Resistance (Sensitivity)</b>	: Within $\pm 1\%$ at 23°C

## Applicable Standards

<b>Nominal case and cutout dimensions for indicating Electrical instruments</b>	: IS 2419 DIN IEC 61554
<b>Scale and pointer for electrical measuring instruments</b>	: IS 1248 DIN 43802
<b>Connections and Terminal markings for panel meters</b>	: IS 1248 DIN 43807
<b>Terminal bolts / leads.</b>	: DIN 46200/46282
<b>Clamp straps for connections</b>	: DIN 46282
<b>Safety requirements and protective measures for Electrical indicating instruments and their accessories. ,</b>	: IS 9249 DIN 40050 VDE 0110 VDE 0410 IEC 529, IEC 1010
<b>Performance specifications for direct acting indicating analogue electrical measuring instruments &amp; their accessories</b>	: IS 1248 IEC 51/DIN EN 60051 DIN 43701
<b>Environmental condition</b>	: IS 1248 IS: 9000 VDE / VDI 3540
<b>Front frames for indicating measuring instruments Principle dimensions</b>	: DIN 43718
<b>UL Combustibility Class</b>	: UL 94 V-0
<b>Technical conditions of delivery for electrical instruments</b>	: DIN 43701
<b>Mechanical strength (Free fall test, vibration test)</b>	: IS 1248 IS 9000 VDE 0411 IEC 61010
<b>Comply with following European directives</b>	: 2004 / 108 / EC (EMC directive), 2006/95/EC (low voltage directive) & amendment 93/68/EEC, For CE Marking.

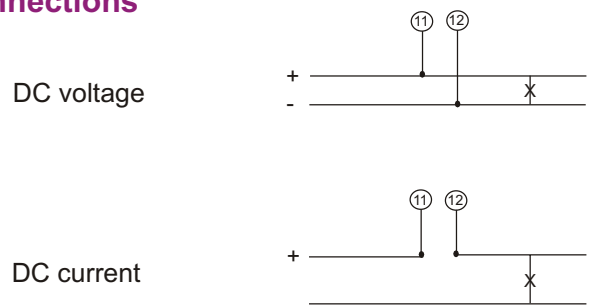
## Accessories

Safety Terminal protection  
Full sized polycarbonate back cover to provide protection against accidental contact (hand and fingers)

## Safety Precautions

- 1) Instruments with damaged bezel or glasses must be disconnected from the mains.
- 2) Adequate safety clearance must be maintained to control panel fasteners and to sheet metal housing. If non - insulated connector wires are used.
- 3) The back cover must be snapped into place after connector wires have been clamped for protection against accidental contact.
- 4) Bezel, Scale and Glass may only be replaced under voltage free conditions.
- 5) Instruments to be used in grounded panel.

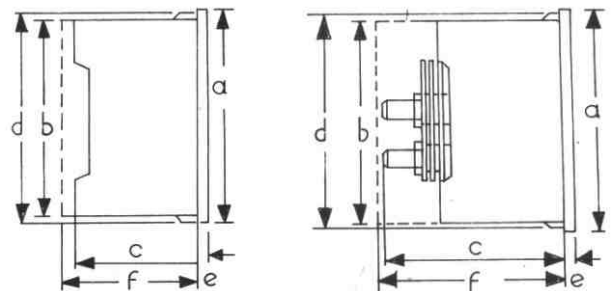
## Connections



## Dimensions

For Voltmeter & Ammeter < 5A

For Ammeter 5 - 60 A



Dimensions		PQ 96	
(in mm)			
Bezel	a	□	96
Case	b	□	90
Depth	c*		53
	d	□	91.5
	e		5.5
Cutout size		□	92 <sup>+0.8</sup>
Weight(Approx)			0.26kg
Depth with back cover f**			64
	* c		= 68mm, for I= 6 to 30 A
	**f		= 70mm, for I= 6 to 30 A

## Ordering Information

<b>Type PQ</b>	Moving-coil panel meter
<b>Front dimension 96</b>	96 mm x 96 mm
<b>Measuring ranges</b>	Refer to table inside
<b>Front facia</b>	Normal glass <sup>*1</sup> Antiglare glass <sup>*3</sup>
<b>Colour of bezel</b>	Black <sup>*1</sup> Red,Blue, Yellow,White <sup>*3</sup>
<b>Position of use</b>	Vertical <sup>*1</sup> on request 0...180° <sup>*3</sup>
<b>Terminal protection</b>	Full sized polycarbonate back cover
<b>Zero position</b>	Left, <sup>*1</sup> Off-set zero <sup>*3</sup> Centre <sup>*1</sup>
<b>Increased sensitivity</b>	4 kohm/V for voltmeters 1...600 V <sup>*3</sup> 10 kohm /V for voltmeters 15 ... 150 V <sup>*3</sup>
<b>Adjustment Resistance (Sensitivity)</b>	Within $\pm 1\%$ at 23°C <sup>*3</sup>
<b>Dial</b>	Standard scale same as measuring range <sup>*1</sup> , Blank dial with division <sup>*3</sup> Additional lettering on request <sup>*3</sup> Additional numbering on request <sup>*3</sup> Coloured marking red or green <sup>*3</sup> Coloured sector red or green <sup>*3</sup>
<b>Logo</b>	RISHABH <sup>*1</sup> , Others <sup>*3</sup>

\*1 standard

\*3 Please clearly add the desired specifications while ordering

## Ordering example

PQ 5A / PQ 500V

PQ 75mV / PQ 10V

PQ 1mA / PQ 1A

Specifications are subject to change without notice (07/10)



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