

Analogue Meters With Moving - Coil Movement with contacts

PQC 96

Data Sheet

Analogue Meters with
Moving - coil Movement
with contacts



Moving Coil meter with
relay contacts (PQC)

Application

These meters offer several advantages in switchboards and transformers Panels, used for measurement of electrical parameters along with the threshold settings for relay operation.

Movement

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

Specifications

Scale and Pointer

Pointer	Knife - edge pointer
Pointer deflection	0...90°
Scale characteristics	Linear
Scale division	Coarse - fine
Scale length	97mm
Over range Ammeters	10 times nominal current for 5 Sec
Voltmeters for use on Voltage transformer	2 times nominal voltage for 5 Sec
Scale Interchangeability	Interchangeable

Mechanical Data

Case details	Moulded square case suitable for mounting in Control / Switchgear panels, Machinery consoles. Glass filled polycarbonate, flame retardant and drip proof as per UL 94 V-0.
Case material	Glass
Front facia	Black
Colour of bezel	Vertical
Position of use	Mounting Clamps
Panel fixing	Stackable in a single cutout
Mounting	≤25 mm
Panel thickness	Plug and play terminal blocks
Terminals	

Electrical Data

Measured quantity	DC current / voltage
Aux Supply	230VAC ± 15%, 45-65Hz
Aux Power consumption	< 5.5 VA
Power consumption	
Ammeter < 15 A	< 1 VA
Ammeter > 15 A	< 1.5 VA
Voltmeter	< 4.5 VA
Overload capacity	(acc. to IS: 1248 / IEC 51)
Continuously	1.2 times rated voltage / current
Short duration	
Voltmeters	2 times for 5 sec : 1 overload 2 times for 0.5 sec : 9 overloads
Ammeter	10 times for 5 sec : 1 overload 10 times for 0.5 sec : 9 overloads 10A @ 250VAC
Relay contact rating	0 - 30 Sec. ± 3 Sec.
Time delay	± 5 % of FSD
Set accuracy	0 - 100%
Trip Setting	± 5 % of FSD
Set accuracy	2% of the scale, Max
Hysterisys	IP 52 case
Enclosure code	Group A according to VDE 0110
Insulation class	1000 V
Rated insulation voltage	2KV
Proof voltage	300 V CAT III (IEC 1010)
Installation category	> 50 Mohm at 500 V d.c
Insulation resistance	< 4 sec
Response time of analog meters	

Accuracy at Reference Conditions

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

Ambient temperature	23° C ± 2° C
Position of use	Nominal position ± 1°
Input	Rated value of measured quantity

Nominal Range of Use

Operating temperature	0...50° C
Storage temperature	-25... + 65° C
Position of use	Vertical ± 5°
External magnetic field	At 0.4 KA/m
Climatic suitability	Climate category II as per IS : 1248 (climatic class 3 according to VDE / VDI 3540)
Relative humidity	≤75% annual average, non - condensing
Shock resistance	15g. 11 ms
Vibration resistance	10-55-10 Hz / 0.15mm 1.5 g at about 50 Hz

Standard Measuring range

Current (mA)	1, 1.5, 2.5, 4, 5, 6, 10, 15, 20, 25, 40, 60, 100, 150, 250, 400, 600,
Current (A)	1, 1.5, 2.5, 4, 5, 6, 10, 15, 25, 30, 40, 60, 100
Voltage (V)	1, 1.5, 2.5, 4, 6, 10, 15, 25, 30, 40, 50, 60, 100, 150, 250, 300, 400, 500, 600

Options

Case

Front facia	Antiglare glass and polycarbonate
Colour of bezel	Red, Yellow, Blue, White
Red index pointer	Front adjustable on site

Dial

Blank dial	With initial and end values marked.
Special markings	Numbering / Lettering.
Division dials	Basic divisions without numbering.
Colour markings/bands	Red or green

Accessories

Safety Terminal Protection

Full sized polycarbonate back cover to provide protection against settings of potentiometer.

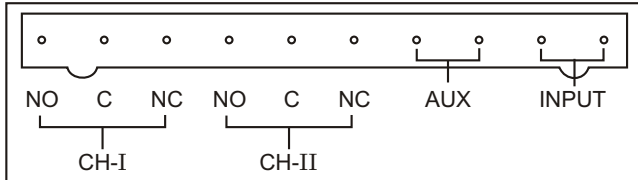
Applicable Standards

Nominal case and cutout dimensions for indicating Electrical instruments	IS 2419 IEC 61554
Scale and pointer for electrical measuring instruments	IS 1248 DIN 43802
Safety requirements and protective measures for electrical indicating instruments and their accessories.	IS 9249 DIN 40050 / 8-70, VDE 0110 / 11-72 VDE 0410 / 10-76 IEC 529, IEC 1010
Performance specifications for direct acting indicating analogue electrical measuring instruments and their accessories.	IS 1248 IEC 51 / DIN EN 60051 DIN 43701
Environmental conditions	IS 1248 IS : 9000, Part 5, 7, 8, VDE / VDI 3540
Front frames for indicating measuring instruments principle dimensions	DIN 43718
UL Combustibility Class	UL 94 V-0
Accuracy test for relay	IS 3231
Rated burden test for relay	IS 3231
Insulation test for relay	IS 3231
Vibration test for relay	IS 3231
Dry heat test for relay	IS 3231

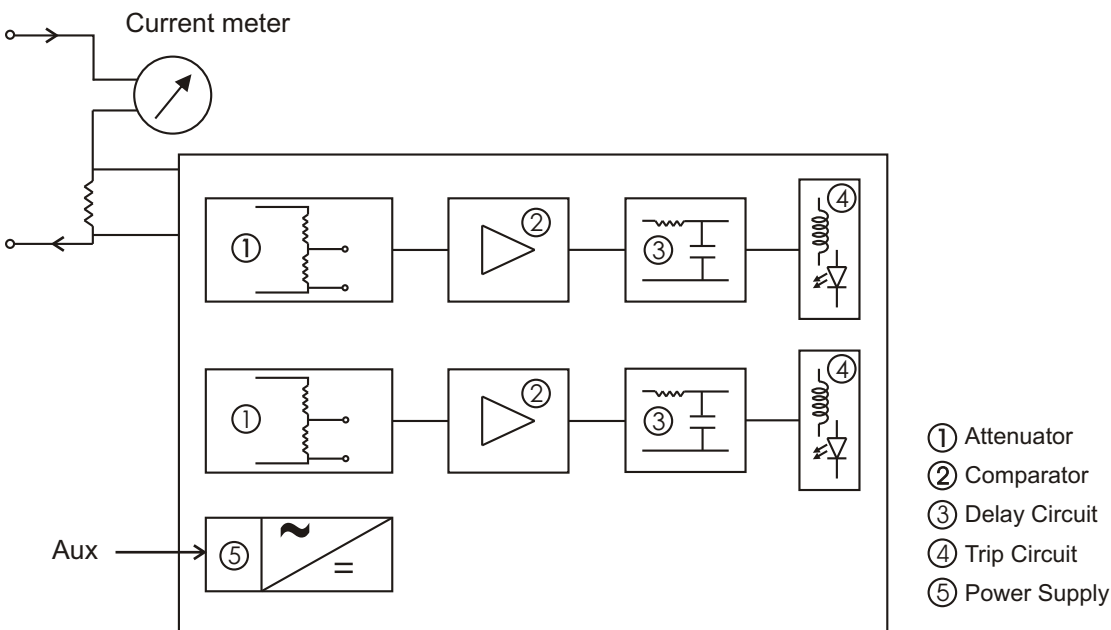
Safety Precautions

- 1) Instruments with damaged bezels or window 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 final settings.
- 4) Scales may only be replaced under voltage - free conditions.
- 5) Bezels and window glasses may only be replaced under voltage - free Conditions.

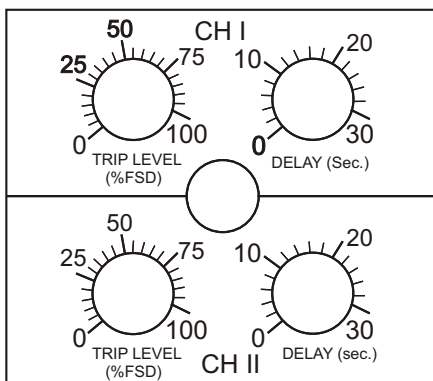
Connections



Schematic Diagram



Trip level and delay settings



	CH-I	CH-II
Trip level setting	0 - 100%	0 - 100%
Delay setting	0 - 30 sec	0 - 30 sec

Relay and LED status

Cascade I mode :

	Relay I	LED I	Relay II	LED II
Healthy condition	ON	OFF	ON	OFF
Trip condition	OFF	ON	OFF	ON

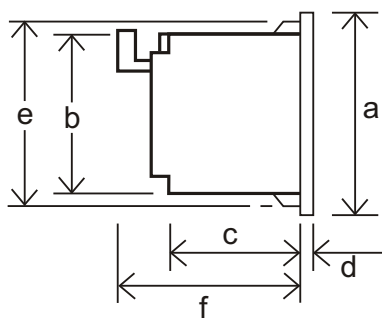
Note : Trip condition will occur after the set delay.

Cascade II mode :

	Relay I	LED I	Relay II	LED II
Healthy condition	OFF	OFF	OFF	OFF
Trip condition	ON	ON	ON	ON

Note : Trip condition will occur after the set delay.

Dimensions



Dimensions (in mm)	PQC 96	
Bezel	a	96
Case	b	87.5
Depth	c	60
	d	5
	f	72
Cutout Size (e)		92 ^{+0.8}
Weight (approx.)		450 gms

Ordering Information

Type	PQC	Moving - coil panel meter with contacts
Front Dimension		96 mm x 96 mm
Measuring Ranges		Refer standard measuring ranges
Index Pointer		None ^{*1} Red ^{*2}
Front facia		Normal glass ^{*1} Polycarbonate ^{*2} Antiglare glass ^{*2}
Colour of Bezel		Black ^{*1} Red, Blue, Yellow, White ^{*2}
Dial		Standard scale same as measuring range ^{*1} Blank dial with division ^{*2} Additional lettering on request ^{*2} Additional numbering on request ^{*2} Coloured marking red or green ^{*2} Coloured sector red or green ^{*2}
Aux		230V ac ^{*1}
Modes		Cascade I / Cascade II
Logo		RISHABH

*1 Standard

*2 Please clearly add the desired specifications while ordering

Ordering example

PQC 96 - 4...20mA - Red - Normal glass - Std - 230V ac - Cascade I - Rishabh



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