

## DATASHEET

Issue 1.0



Multifunction Meters

Transducers & Isolators

Temperature Controllers

Converters & Recorders

Digital Panel Meters

Current Transformers

Analogue Panel Meters

Shunts

Digital Multimeters

Clamp Meters

Insulation Testers

## MOVING IRON METER WITH RELAY CONTACTS (EQC) AC Voltage/Current

## ANALOGUE METERS

**SUBJECT TO CHANGE WITHOUT NOTICE**

This manual superseded all previous versions – please keep for future reference



### 1. Application

These meters offer several advantages in switchboards and Transformers Panels. Front window glass and bezel can be easily replaced.

### 2. Movement

Moving iron movement has pivots of very high hardness. Movement is suspended between spring loaded sapphire jewels. Movement is critically damped by use of silicon coil.

### 3. Specifications

Scale and Pointer	
Pointer	Knife - edge pointer
Pointer deflection	0...90°
Scale characteristics	Near Linear above 10% of nominal Full Scale value
Scale division	Coarse - fine
Scale length	EQC96 97mm
Over range:	
Ammeters	2 times nominal current
Voltmeters for use on	1.2 times nominal voltage
Voltage transformer	
Scale Interchangeability	Interchangeable
Mechanical Data	
Case details	Moulded square case suitable for mounting in Control / Switchgear panels, Machinery consoles.
Case material	Glass filled polycarbonate, flame retardant and drip proof as per UL 94 V-0.
Front fascia	Glass
Colour of bezel	Black
Position of use	Vertical
Panel fixing	Swivel screws
Mounting	Stackable in a single cutout
Panel thickness	< 40 mm
Terminals	Plug in screw terminal block
Electrical Data	
Measured quantity	AC current or Voltage
Power consumption	< 0.5VA
Aux Supply	230VAC +/- 15%, 45-65Hz
Aux Power consumption	< 5.5VA
Overload capacity	(acc. to IS: 1248 / IEC 51)
Continuously	1.2 times rated dc current
Short duration	
5 s max.	10 times (200A max). 10 times
1 s max	-- 40 times (250A max.)
Relay contact rating	10A @ 250VAC
Time delay	0 - 20 Sec. +/- 3 Sec.
Set Accuracy	+/- 5 %
Trip Setting	0 - 100%
Set Accuracy	+/- 5 %
Hysteresis	2% of the scale
Enclosure code	IP 52 case
(IEC 529)	IP 00 for terminals without back cover IP 20 for terminals without back cover

Insulation class	Group A according to VDE 0110
Rated insulation voltage	1000V
Proof voltage	EQC 96 : 2kV
Installation category	600 V CAT III (IEC 1010)
Insulation resistance	> 50 Mohm at 500 V d.c
Accuracy at Reference Conditions	
Accuracy class	1.5 according to IS: 1248
Reference conditions	(IEC 51/ DIN EN 60051)
Ambient temperature	23°C + 2
Position of use	Nominal position + 1°
Input	Rated value of measured quantity
Wave form	sine wave, distortion factor <= 5 %
Frequency	45...65Hz
Other conditions	IS : 1248 (IEC 51/ DIN EN 60051)
Nominal Range of Use	
Ambient Temperature	0...50°C
Position of use	Vertical +/- 5°
Frequency	15...400Hz (current)
External magnetic field	At 0.4 kA/m, less than 6% of fiducial value (not as a percentage class index)
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. 11 ms
Vibration resistance	1.5 g at about 50 Hz
Standard Measuring range	5A
Options	
Case	
Front fascia	Antiglare glass
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 accidental contact ( hand and fingers ) acc.to IS 9249, VDE 0410.	

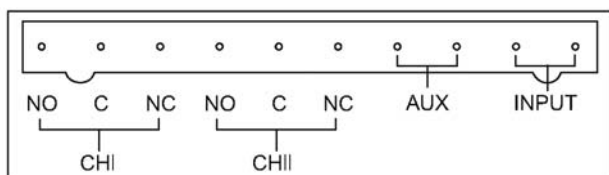
#### 4. Applicable Standards

Nominal case and cutout dimensions for indicating Electrical instruments	IS 2419 DIN 43700
Scale and pointer for electrical measuring instruments	IS 1248 DIN 43802
Connections and Terminal markings for panel meters	IS 1248-1983 DIN 43807
Terminal bolts / leads	DIN 46200/46282
Safety requirements and protective measures for Electrical indicating instruments and their accessories	IS 9249-1979 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 Environmental conditions	IS 1248-1983 IEC51/DINEN60051 DIN 43701 IS 1248 - 1983 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
Comply with following European directives	89 / 336 / EEC
(EMC Directive), 73 / 23 / EEC (low voltage directive) & amendments 93 / 68 / EEC, For CE Marking	

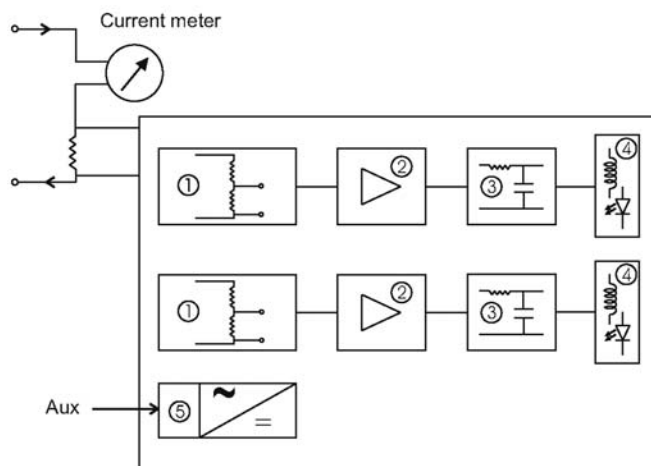
#### 5. Safety Precautions

- 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 connector have been clamped for protection against accidental contact.
- 4) Scales may only be replaced under voltage - free conditions.
- 5) Bezels and window glasses may only be replaced under voltage - free Conditions.

#### 6. Connections

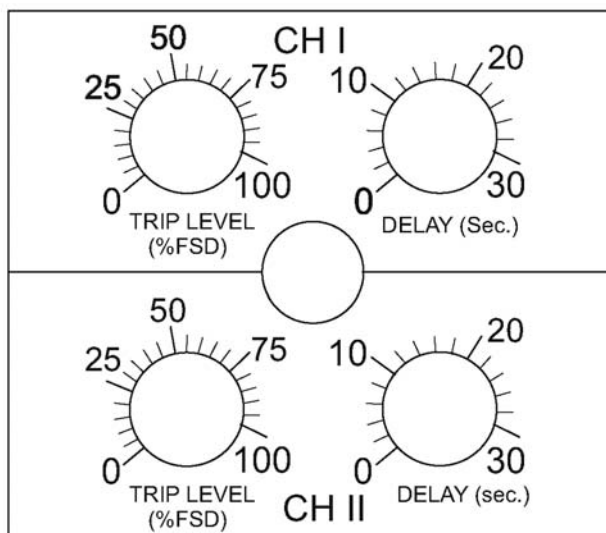


#### 7. Schematic Diagram



1. Attenuator
2. Comparator
3. Delay Circuit
4. Trip Circuit
5. Power Supply

#### 8. Trip level and delay settings



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

## 9. 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

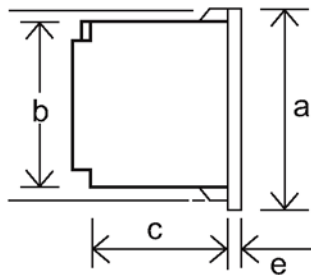
Note : Trip condition will occur after the set delay.

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.

## 10. Dimensions



Dimensions (in mm)		EQC 96
Bezel	a	96
Case	b	90
Depth	c	52
	e	5
Cutout Size		92+0.8
Weight (approx.)		450 gms

## 11. Ordering Information

Type EQC	Moving - iron panel meter with contacts
Front Dimension	96 mm x 96 mm
Over Range (ammeters)	no over range <sup>*2</sup> 2 times nominal current <sup>*1</sup> 6 times nominal current <sup>*2</sup>
(voltmeters)	2 times rated voltage <sup>*1</sup>
Measuring Ranges	Refer standard measuring ranges
Index Pointer	None <sup>*1</sup> Red <sup>*2</sup>
Front facia	Normal glass <sup>*1</sup> Polycarbonate <sup>*2</sup> Antiglare glass <sup>*2</sup>
Colour of bezel	Black <sup>*1</sup> Red, Blue, Yellow, White <sup>*2</sup>
Dial	Standard scale same as measuring range Blank dial with division <sup>*2</sup> Additional numbering on request <sup>*2</sup> Coloured marking red or green <sup>*2</sup> Additional lettering on request <sup>*2</sup> Coloured sector red or green <sup>*2</sup>
Aux	230V ac <sup>*1</sup>
Modes	Cascade I / Cascade II
Logo	Sifam Tinsley

<sup>\*1</sup> Standard

<sup>\*2</sup> Please clearly add the desired specifications while ordering

## 12. Ordering example

EQC 96 - 0-5Amps - Red - Normal glass - Std - 230V ac - Cascade I

## Contact



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