sifam tinsley
PRECISION INSTRUMENTATION

ANALOGUE PANEL METERS
SELECTOR SWITCH METER
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CE

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

# SELECTOR SWITCH METER

The moving iron, panel meters, EQ 72/96 housed in moulded polycarbonate cases are suitable for the measurement of AC currents for frequency range of 15...400Hz and voltages in the frequency range of 15...100Hz.

## Features

- 3 ph 3 wire & 4 wire voltage & current measurement possible.
- Near Linear scale.
- Knife edge pointer.
- Glass filled polycarbonate housing(UL 94 V-0).
- Easy installation with swivel screws.

**SUBJECT TO CHANGE WITHOUT NOTICE**
This manual superseded all previous versions – please keep for future reference

## Movement

Moving iron movement has pivots of very high hardness.Movement is suspended between spring loaded saphire jewel and silicon jewel. Movement is critically damped by use of silicon oil.

## Mechanical Data

| | |
|---|---|
| Case details | Moulded square case suitable for mounting in Control / switchgear panels Machinery consoles. |
| Case material | 10% Glass filled Polycarbonate, flame retardant and drip proof as per UL 94 V-0. |
| Front facia | Glass |
| Colour of bezel | Black |
| Position of use | Vertical |
| Panel fixing | Swivel Screw |
| Mounting | Stackable in a single cutout |
| Panel thickness | < 25 mm |
| **Terminals** | |
| Voltmeters and Ammeters | Hexagon studs, M4 screws and wire clamps E3 |

## Electrical Data

| | |
|---|---|
| Measured Quantity | AC voltage or current |
| **Power consumption(Approx)** | |
| Voltmeters<br>Ammeters | < 4.5VA<br>< 0.5VA |
| Overload capacity | acc to IEC 51 |
| Continuously | 1.2 times rated voltage / current |
| **Short duration** | |
| Ammeters | 10 times for 5 sec : 1 overload<br>10 times for 0.5 sec : 9 overloads |
| Voltmeters | 2 times for 5 sec : 1 overload<br>2 times for 0.5 sec : 9 overloads |
| Rated insulation Voltage | SWT 72/96 : 1KV |
| Proof voltage | SWT 72/96 : 3KV |
| Enclosures code (IEC 529) | IP 40 for case<br>IP 00 for terminals without backcover<br>IP 20 for terminals with backcover |
| Insulation class | Group A according to VDE 0110 |
| Installation category | SWT 72/96 : 600V CAT III |
| Insulation resistance | > 50 Mohm at 500 V DC |

## Standard Measuring Ranges

| A.C. Voltage | A.C. Current |
|---|---|
| 120 | 1 A |
| 150 | 5 A |
| 300 | |
| 500 | |
| 600 | |

Non-Standard ranges available on request.

AC Ammeters
For there will be 4 switch positions as-OFF L1 L2 L3

For AC Voltmeters
For 3 phase 3 wire system, 4 switch positions are as-OFF L1-L2 L2-L3 L3-L1
For 3 phase 4 wire system, 6 switch positions are as-L1-L3 L2-L3 L1-L2 L1-N L2-N L3-N
For 3 phase 4 wire system, 7 switch positions are as-OFF L1-L3 L2-L3 L1-L2 L1-N L2-N L3-N

## 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 | SWT 72 SWT 96<br>54 mm 97 mm |
| Scale Interchangeability | Scales are interchangeable |
| Ammeters | 2 times nominal current |
| Voltmeters | 1.2 times nominal voltage |

## Reference Conditions

| | |
|---|---|
| Accuracy class | 1.5 according to IEC 51/ DIN EN 60051 |
| Ambient temperature | 23 °C ± 2 °C |
| Position of use | Nominal position + 1° |
| Input Waveform | Rated value of measured quantity sine wave, distortion factor < 5 % |
| Frequency | 45...65HZ |
| Other condition | IEC 51/ DIN EN 60051 |
| **Nominal range of use** | |
| Ambient temperature | 0 ... 50°C |
| Position of use | Vertical +5° |
| Frequency | 15 ... 100 Hz (voltage)<br>15 ... 400 Hz (current) |
| External magnetic Field | At 0.4 ka/m |

## Environmental Conditions

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

## Options

| | |
|---|---|
| **Case** | |
| Front Facia | Antiglare glass |
| Color of bezel | Red, yellow, blue, white |
| Red index pointer | Front adjustable on site |
| Position of use | on request 0° ...180° |
| **Dial** | |
| Blank dial | With initial and end values marked |
| Special markings | Numbering/Lettering |
| Division dials | Basic divisions without numbering |
| Color markings/bands | Red or green |
| Over range (Ammeters) | Two times over range Six times over range |

## Applicable Standards

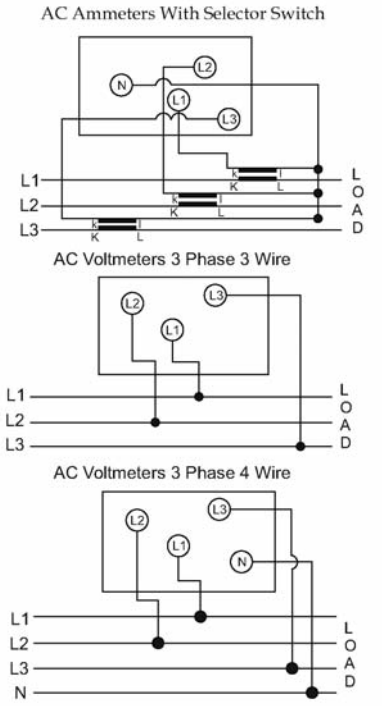
| | |
|---|---|
| Nominal case and cutout dimensions for indicating Electrical instruments | DIN IEC 61554 |
| Scale and pointer for electrical measuring instruments | DIN 43802 |
| Connections and Terminal markings for panel meters | DIN 43807 |
| Terminal bolts/leads | DIN 46200/46282 |
| Safety requirements and protective measures for Electrical indicating. Instruments and their accessories | DIN 40050, VDE 0110, VDE 0410 IEC 529, IEC 1010 |
| Performance specifications for direct acting indicating analogue electrical measuring instruments and their accessories | IEC51/DINEN60051 DIN 43701 |
| Environmental conditions | VDE / VDI 3540 |
| Front frames for indicating measuring instruments Principle dimensions | DIN 43718 |
| UL Compatibility | UL 94 V-0 |

Comply with following European directives:
2004 / 108 / EC (EMC directive ) , 2006 / 95 /EC (low voltage directive) & amendment 93/68/EEC, For Marking.

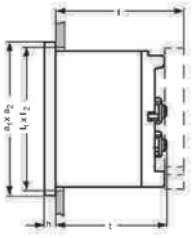
## Safety Precautions

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.

## Connection Diagrams




## Dimensions



| Front in mm | Nominal Dimensions, mm | | Cutout, mm | Installation Depth Including Terminal (t), mm | Installation Depth Incl. Full back Cover (f), mm |
|---|---|---|---|---|---|
| | $a_1 \times a_2$ | h | $l_1 \times l_2$ | | |
| 72 x 72 | 72 x 72 | 5.5 | $68^{+0.7} \times 68^{+0.7}$ | 53 | 64 |
| 96 x 96 | 96 x 96 | 5.5 | $92^{+0.8} \times 92^{+0.8}$ | 53 | 64 |

## Ordering Information*

| **Voltmeter Size 72 x 72** | | |
|---|---|---|
| Part No. | Description | Notation |
| SS74-V2CX2N1CA70ST 120V | DIAL 0-120V | 7 |
| SS74-V2LX2N1CA70ST 150V | DIAL 0-150V | 7 |
| SS74-V2QX2N1CA70ST 300V | DIAL 0-300V | 7 |
| SS74-V2VX2N1CA70ST 500V | DIAL 0-500V | 7 |
| SS74-V2WX2N1C760ST 600V | DIAL 0-600V | 7 |
| | | |
| SS74-V2CX2N1CA60ST 120V | DIAL 0-120V | 6 |
| SS74-V2LX2N1CA60ST 150V | DIAL 0-150V | 6 |
| SS74-V2QX2N1CA60ST 300V | DIAL 0-300V | 6 |
| SS74-V2VX2N1CA60ST 500V | DIAL 0-500V | 6 |
| SS74-V2WX2N1CA60ST 600V | DIAL 0-600V | 6 |
| | | |
| SS74-V2CX2N1CA40ST 120V | DIAL 0-120V | 4 |
| SS74-V2LX2N1CA40ST 150V | DIAL 0-150V | 4 |
| SS74-V2QX2N1CA40ST 300V | DIAL 0-300V | 4 |
| SS74-V2VX2N1CA40ST 500V | DIAL 0-500V | 4 |
| SS74-V2WX2N1CA40ST 600V | DIAL 0-600V | 4 |
| | | |
| **Ammeter Size 72 x 72** | | |
| **SS74-I0112N1CA40ST 1A | Dial 0-100% | 4 |
| **SS74-I0312N1CA40ST 5A | Dial 0-100% | 4 |

| **Voltmeter Size 96 x 96** | | |
|---|---|---|
| Part No. | Description | Notation |
| SS94-V2CX2N1CA60ST 120V | DIAL 0-120V | 7 |
| SS94-V2LX2N1CA60ST 150V | DIAL 0-150V | 7 |
| SS94-V2QX2N1CA60ST 300V | DIAL 0-300V | 7 |
| SS94-V2VX2N1CA60ST 500V | DIAL 0-500V | 7 |
| SS94-V2WX2N1CA60ST 600V | DIAL 0-600V | 7 |
| | | |
| SS94-V2CX2N1CA60ST 120V | DIAL 0-120V | 6 |
| SS94-V2LX2N1CA60ST 150V | DIAL 0-150V | 6 |
| SS94-V2QX2N1CA60ST 300V | DIAL 0-300V | 6 |
| SS94-V2VX2N1CA60ST 500V | DIAL 0-500V | 6 |
| SS94-V2WX2N1CA60ST 600V | DIAL 0-600V | 6 |
| | | |
| SS94-V2CX2N1CA40ST 120V | DIAL 0-120V | 4 |
| SS94-V2LX2N1CA40ST 150V | DIAL 0-150V | 4 |
| SS94-V2QX2N1CA40ST 300V | DIAL 0-300V | 4 |
| SS94-V2VX2N1CA40ST 500V | DIAL 0-500V | 4 |
| SS94-V2WX2N1CA40ST 600V | DIAL 0-600V | 4 |
| | | |
| **Ammeter Size 96 x 96** | | |
| **SS94-I0112N1CA40ST 1A | Dial 0-100% | 4 |
| **SS94-I0312N1CA40ST 5A | Dial 0-100% | 4 |
| | | |

For Ammeters there will be 4 switch notation positions as-OFF L1 L2 L3
For 3 phase 3 wire system, 4 switch notation positions are as-OFF L1-L2 L2-L3 L3-L1
For 3 phase 4 wire system, 6 switch notation positions are as-L1-L3 L2-L3 L1-L2 L1-N L2-N L3-N
For 3 phase 4 wire system, 7 switch notation positions are as-OFF L1-L3 L2-L3 L1-L2 L1-N L2-N L3-N

*For more details and product codes, please contact our local office.

**Note Please advise the required Ammeter scale at the time of ordering, alternatively separator scales/dials can be ordered via the below part number
Example: SS74-00D1-0001 0/100A (72x72mm 0/100A 100A/5A)
SS94-00D1-0001 0/100A (96x96mm 0/100A 100A/5A)

## Contact

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