

DATASHEET

Issue 1



- Multifunction Meters
- Transducers & Isolators
- Temperature Controllers
- Converters & Recorders
- Digital Panel Meters
- Current Transformers
- kWh Energy Meters
- Analogue Panel Meters
- Shunts
- Digital Bargraphs
- Digital Multimeters
- Protection Relays
- Synchroscope Series
- Rotary Switches
- Power Supplies
- Test & Measurement

FQ1 VIBRATING REED TYPE

SUBJECT TO CHANGE WITHOUT NOTICE

This datasheet superseded all previous versions – please keep for future reference

Product Features:

- Glass filled polycarbonate housing (UL 94 V-0)
- Easily replacement of glass and bezel
- Easy installation with swivel screws.

FQ1 Vibrating Reed Type



Application

The reed type frequency meters, FQ 72 / 96 housed in moulded polycarbonate cases are suitable for the measurement of frequencies in the range of 45 to 55 Hz.

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

Functional Principle

Vibrating reed type frequency meter is a mechanical resonance type frequency meter which consists of an electromagnet and reeds.

This movement consists of a number of thin steel strips called reeds fixed on a steel plate. These reeds are placed in a row close to an electromagnet as shown in Figure 1. The coil of an electromagnet is connected across the supply, whose frequency is to be measured, along with a series resistance, mounted on the backside of the instrument.

Specifications

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 facia	Glass
Colour of bezel	Black
Position of use	Vertical
Panel fixing	Swivel screws
Mounting	Stackable in a single cutout
Panel thickness	< 25 mm
Terminals	Hexagon studs, M4 screws And wire clamps E3
Mechanical properties	VDE 0411, Part 1 Clause 43/44
Electrical Data	
Measured quantity	Frequency 45 to 55 Hz
Input quantity	Alternating voltage in sine waveform
Overload capacity	(acc. to IS: 1248 / IEC 51)
Continuously	1.2 times rated voltage
Short duration	2 times rated voltage, 5 sec
Protection against ingress of foreign bodies	IEC 529 (DIN 40050)
Enclosure code (IEC 529)	IP 52 case IP 00 for terminals without back cover IP 20 for terminals with back cover
Insulation class	Group A according to VDE 0110
Rated insulation voltage	660V
Proof voltage	2KV
Installation category	300V CAT III
Insulation resistance	> 50 Mohm at 500 V d.c
Power consumption	<=5VA
Rated input voltage	
	110 V 220 V 230 V 240 V 400 V 415 V 440 V
Accuracy at Reference Conditions	
Accuracy class	0.5 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 Voltage ± 2%
Other conditions	IS : 1248 (IEC 51/ DIN EN 60051)
Nominal range of use	
Ambient temperature	0...50°C
Position of use	Nominal position ± 5°
External magnetic field	0.5 mT
Voltage	Rated Voltage ± 15 %

Environmental Conditions	
Climatic suitability	Climate category II as per IS : 1248, IS 9000 (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, 11ms
Vibration resistance	10-55-10 Hz / 0.15mm 1.5 g at about 50 Hz
Pollution degree	2

Options

Case	
Front fascia	Antiglare glass
Colour of bezel	Red, Yello w, Blue, White.
Position of use	on request 0180°

Applicable Standards

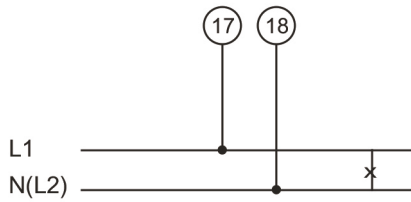
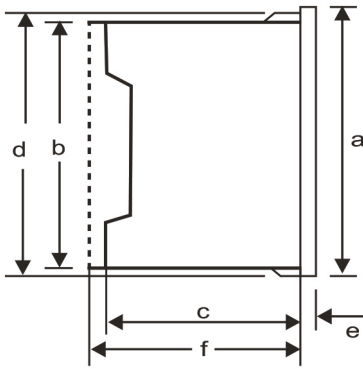
Specifications for direct acting indicating analogue electrical instruments & their accessories.	IS 1248, IEC 51
Dimensions for panel mounted indicating and recording electrical measuring instruments	IS 2419 DIN 43700
Front frames for indicating measuring instruments Principle dimensions	DIN 43718
Safety requirements for indicating and recording electrical measuring instruments	IS 9249 VDE 0410 - 10.76 VDE 0106
Degrees of protection provided by the enclosures for electrical instruments	IEC 529 DIN 40050, VDE 0411
Climate class; determination and testing	IS 1248, IS 9000 VDE / VDI 3540
Electrical panel mounting measuring instruments; terms of delivery.	DIN 43701
UL Combustibility Class	UL 94 V-0

Safety Terminal Protection

Full sized polycarbonate back cover to provide protection against accidental contact (hand and fingers) acc.to IS 9249, VDE 0410.

Safety Precautions

- Instruments with damaged bezels or window glasses must be disconnected from mains.
- Adequate safety clearance must be maintained to control panel fasteners and to sheet metal housing, if non - insulated connector wires are used.
- The back cover must be snapped into place after the connector wires have been clamped for protection against accidental contact.
- Scales should be replaced under Voltage- free conditions.
- Bezels and window glasses should be replaced under Voltage - free conditions

Connections

Dimensions


Dimensions (in mm)		FQ 72	FQ 96
Bezel	a	□ 72	□ 96
Case	b	□ 66	□ 90
Depth	c*	□ 53	□ 53
	d	□ 67.5	□ 91.5
	e	□ 5.5	□ 5.5
Cutout Size		□ 68 ^{+0.7}	□ 92 ^{+0.8}
Depth with Back cover	f**	64	64
Weight (approx.)		0.21 kg	0.28 kg

Ordering Information

Type FQ	Pointer type frequency meter
Front dimension	
72	72 mm x 72 mm
96	96 mm x 96 mm
Measuring Ranges	
Terminal protection	Full sized polycarbonate back cover
Front facia	Normal glass ^{*1} PC glass ^{*3} Antiglare glass ^{*3}
Colour of bezel	Black ^{*1} Red, Blue, Yellow, White ^{*3}
Position of use	Vertical ^{*1} On request 0 180° ^{*3}
Logo	Sifam Tinsley ^{*1} Others ^{*3}

*1 standard

*3 Please clearly add the desired specifications while ordering.

Ordering example

FQ 96 Measuring range 45....50....55 Hz, rated voltage AC 230V

Specifications are subject to change without notice(11/11).

Contact



Sifam Tinsley Instrumentation Ltd

1 Warner Drive
Springwood Industrial Estate
Braintree
Essex
CM7 2YW

Tel: 01376 335271
Email: sales@sifamtinsley.com

www.sifamtinsley.co.uk