

# Ziegler

Redefine Innovative Metering

# Technical Datasheet

VIBRATING REED FREQUENCY METER

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ANALOG PANEL METER

# ELAPSED TIME METER ETM

## ANALOG PANEL METER

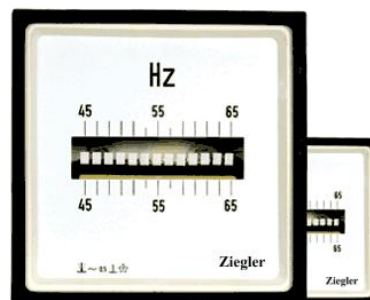
### FQ 72/96

Vibrating reed type frequency meter measures frequencies in range of 45Hz to 65Hz in polycarbonate casing of size 72/96. This meters works on the principle of Resonance. Meter consist of electromagnet and reeds(no of thin steel strips). 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.

These meters offers advantages in switch board and Generating set panels.

### Product Features

- Glass filled polycarbonate housing UL94 V-0
- Easy replacement of glass and bezel
- Easy installation with swivel screws



### 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 UL94 V-0.
Front facia	Glass
Colour of bezel	Black
Position of use	Vertical
Panel fixing	Swivel screws
Mounting	Stack-able in a single cutout
Panel thickness	≤40mm
Terminals	Hexagon studs, M4 screws & wire clamps E3 (DIN 46282)
Mechanical Properties	VDE 0411, Part 1 Clause 43/44
Electrical Data	
Measured quantity	Frequency
Input Quantity	Alternating Voltage in sine waveform
Overload Capacity (acc. IEC 51)	Continuously 1.2 times rated voltage Short duration 2 times rated voltage, 5sec
Protection against Ingress of foreign bodies	IEC 529 (DIN 40050)
Enclosure code (IEC 60529)	IP52 for 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	600V CAT III
Insulation resistance	≥50 MΩ at 500V DC
Power Consumption (Burden)	≤5VA

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Reference Conditions	
Accuracy Class	0.5 according to IEC 60051
Ambient temperature	23°C ± 2°C
Position of use	Nominal position ± 1°
Input	Rated Voltage ± 2%
Other Conditions	IEC 60051/EN 60051
Nominal range of use Ambient Temperature	0...50°C
Position of use	Nominal ± 5°
External Magnetic Field	0.5 mT
Voltage	Rated Voltage ±15%
Environmental conditions	
Climatic suitability	Climate category II as per IEC 60051(climatic class 3 acc 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	10-150-10 Hz/0.15mm, 1.5 g at about 50 Hz

## STANDARD MEASURING RANGES

AC VOLTAGES	Frequency Range
110V	45...50...55Hz
220V	47...50...53Hz
230V	
240V	
400V	
415V	
440V	

Applicable standards	
Nominal case & cutout dimensions for indicating electrical instruments	DIN 43700
Connections and terminal markings for panel meters	IEC 60051, DIN 43807
Specification for direct acting indicating analogue electrical instruments & their accessories	IEC 60051
Climate class; determination and testing	VDE/VDI 3540
Safety requirements and protective measures for Electrical indicating instruments and their accessories	DIN ,40050/8-70, VDE 0110/ 11-72,VDE 0410/ 10-76 IEC 60529, IEC 61010
Front frames for indicating measuring instruments principle dimensions	DIN 43718

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## ANALOG PANEL METER

UL Combustibility class	UL94 V-0
Electrical Panel Mounting measuring instruments; terms of delivery	DIN 43701

Options	
Front facia	Anti glare glass
Colour of bezel	Red, Yellow, Blue, White
Red Index pointer	Front adjustable on site
Position of use	On request 0°...180°
Blank Dial	Yes
Special markings	Numbering / Lettering

## Accessories

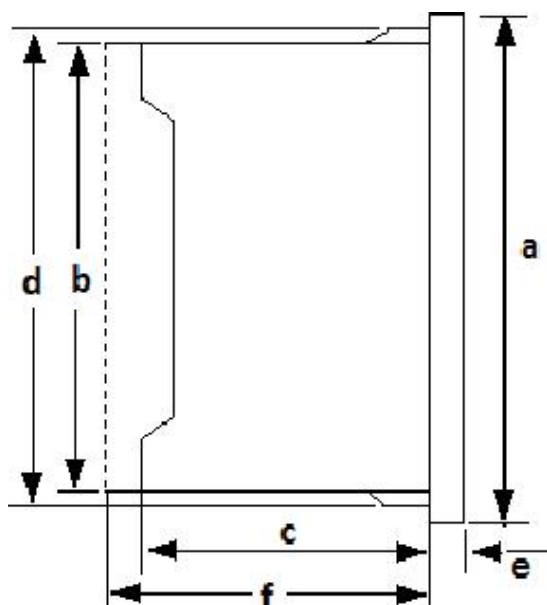
### Safety Terminal Protection

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

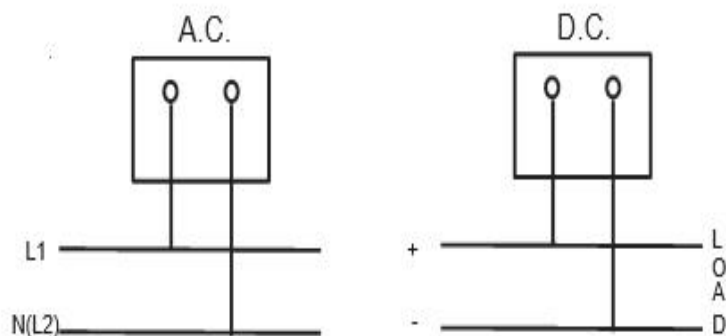
### Safety Precautions

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

### Dimensions:



### Connection Diagram :



		FQ 72	FQ 96
Dimensions (in mm)			
Bezel	a	<input type="checkbox"/> 72	<input type="checkbox"/> 96
Case	b	<input type="checkbox"/> 66	<input type="checkbox"/> 90
Depth	c*	<input type="checkbox"/> 53	<input type="checkbox"/> 53
	d	<input type="checkbox"/> 67.5	<input type="checkbox"/> 91.5
	e	<input type="checkbox"/> 5.5	<input type="checkbox"/> 5.5
Cutout Size		<input type="checkbox"/> 68+0.7	<input type="checkbox"/> 92+0.8
Depth with Back Cover	f**	64	64
Weight (approx.)		0.21 kg	0.28 kg

## Ordering information

FQ	
Front dimension	72X72mm, 96X96mm
Input ranges	Refer to table inside
Terminal Protection	Full sized polycarbonate back cover
Front fascia	Normal glass <sup>*1</sup> , PC glass <sup>*3</sup> , Anti glare glass <sup>*3</sup>
Colour of bezel	Black <sup>*1</sup> Red, Blue, Yellow, White <sup>*3</sup>
Position of use	Vertical <sup>*1</sup> On request 0°...180° <sup>*3</sup>
Dial	Standard Blank
Logo	Ziegler <sup>*1</sup> , Others <sup>*3</sup>

\*1 Standard

\*3 Please clearly add the desired specifications while ordering

**Example** – FQ 72 Rated Voltage AC 120 V, measuring range 45...50...55Hz Hz

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

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**Ziegler Instrumentation UK Ltd.**

Central Buildings, Woodland close old woods Trading Estate, Torquay Devon, TQ2 7BB, United Kingdom  
+441803 616 800 | [info@ziegler-instrument.com](mailto:info@ziegler-instrument.com) | [ziegler-instrument.com](http://ziegler-instrument.com)