Ziegler

Redefine Innovative Metering

Technical Datasheet

DIN RAIL CLAMPING ANALOG METER

ANALOG PANEL METER

www.ziegler-instrument.com

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Din Rail APM

The Din Rail Analog EQ 35, PQ 35, ZQ 35 meters are Designed for the measurement of current, voltage and frequency in distribution segment. Mounting width of APM is 45mm. Din Rail meters are housed in Moulded polycarbonate cases suitable for Current AC/DC, voltage AC/DC and frequency measurement. EQ indicates RMS values . Error indication may occur for extreme wave i.e frequencies above 100kHz. Frequency meters are designed to measure system frequency from 45…65Hz with different system voltages.

Product Features

- Easy mounting with 35 mm Din-rail.
- Near linear scale for EQ & linear scale for PQ & ZQ.
- Glass filled polycarbonate housing.

Specifications:

Mechanical Data	
Case details	Projecting case clamping to 35mm mounting rail complying with DIN EN 50022
Case material	Thermoplastic self extinguishing
Front facia	Glass
Colour of bezel	Black
Position of use	Vertical ± 5˚
Panel fixing	Swivel screws
Mounting	Din Rail 35mm
Dimensions L x W x H	85mm x 45mm x 65mm
Terminals	Brass Hexagon studs, M4 screws & wire clamps E3 (DIN 46282)
Electrical Data	
Measuring unit	EQ 35 AC Voltage or AC Current PQ 35 DC Voltage or DC Current ZQ 35 Frequency
Over Load Capacity Continuously Short duration: Voltmeter Ammeter	 1.2 times rated voltage and current 2 times rated voltage max. 1000V upto 5s. 10 times rated current (5 sec 200A max) 40 times (1 Sec 250A max)
Enclosure code (IEC 60529)	IP52 for case IP 00 for terminals without back cover
Insulation class	Group A according to VDE 0110
Rated Insulation Voltage	660V
Proof voltage	2KV
Installation category	600V CAT III
Dielectric test	3kV 50Hz, 1min acc, To DIN 57410

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Power Consumption EQ 35 (Burden) Voltmeter Ammeter	Approx. 1.5…3VA Approx. 0.5…1VA
Accuracy Class	1.5 acc to EN 60051
Scale and Pointer	
Pointer	Knife-edge pointer
Dial	Interchangeable
Pointer Deflection	0...90˚
Scale Characteristics	Near Linear above 10% of nominal full scale value for EQ35 Linear for PQ35/ZQ35
Scale Division	Coarse-Fine
Scale Length	38mm
Over-Range Scaling	Ammeters : 2 time rated current Voltmeter (with PT) : 1.2 times rated voltage
Scale Interchangeability	Possible for all ranges
Reference Conditions	
Ambient temperature	23°C ± 2°C
Position of use	Nominal position ± 1°
Input	Rated value of measured quantity
Nominal range of use Ambient Temperature	0…50°C
Position of use	Vertical ± 5°
External Magnetic Field	0.5 mT
Frequency	15…100Hz (Voltage) 15…400Hz(Current)
Wave form	Sinusoidal, Distortion factor <= 5%
Other conditions	As per EN 60051
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	1.5 g at about 50 Hz

STANDARD MEASURING RANGES

AC Current EQ 35	AC Voltage EQ 35
1 A 1.2 A5 A 6 A 10 A 12 A 15 A **(For use on Current transformer[1])**	100 V 120 V 150 V 250 V 300 V 500 V 600 V

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	(For use on Potential transformer[1])
N/1A	.../ 100 V sec.
N/5A	.../ 110 V sec

please state transformer ratio ordering.

1) full scale value = 2 times rated current (overload scaling)

2) full scale value = 1.2 times rated voltage (overload scaling)

DC current PQ 35 voltage drop aprox.		**DC voltage PQ 35** internal resistance		
1mA	60 mV	100m V	1000	/ V*
1.5mA	60 mV	150m V	1000	/ V
2.5mA	60 mV	250m V	1000	/ V
4mA	60 mV	400m V	1000	/ V
5mA	60 mV	600m V	1000	/ V
6mA	60 mV	1 V	1000	/ V
10mA	60 mV	1.5 V	1000	/ V
15mA	60 mV	2.5 V	1000	/ V
20mA	60 mV	4 V	1000	/ V
25mA	60 mV	6V	1000	/ V
40mA	60 mV	10 V	1000	/ V
60mA	60 mV	15 V	1000	/ V
100mA	60 mV	25 V	1000	/ V
150mA	60 mV	40 V	1000	/ V
250mA	60 mV	60 V	1000	/ V
400 mA	60 mV	100 V	1000	/ V
600mA	60 mV	150 V	1000	/ V
1A	60 mV	250 V	1000	/ V
1.5A	60 mV	400 V	1000	/ V
2.5A	60 mV	500 V	1000	/ V
4A	60 mV	600 V	1000	/ V
6A	60 mV			

For use with external shunt		
60 mV	1000	/V
150 mV	1000	/V

a total lead resistance of 0.05 is considered in the calibration of the indicator for connecting leads 1 m, 2 x 0.75 mm^2

FREQUENCY ZQ 35	**VOLTAGE ZQ 35**
45-55 Hz	110 V
55-65 Hz	110 V
45-65 Hz	110 V
45-55 Hz	220 V
55-65 Hz	220 V
45-65 Hz	220 V
45-55 Hz	440 V
55-65 Hz	440 V
45-65 Hz	440 V

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Applicable standards	
Nominal case & cutout dimensions for indicating electrical instruments	DIN 43700
Connections and terminal markings for panel meters	DIN 43807
Scale and Pointer	DIN 43802
Terminal bolts / leads	DIN 46200/46282
Performance Specification	IEC/EN 60051
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
UL Combustibility class	UL94 V-0
European directives (EMC Directive) 73/23/EEC (Low Voltage directive) and amendment 93/68/EEC, for CE mark	89/336/EEC
Mounting rails	DIN EN 50022

Options	
Blank Dial	Marked initial and end values
Additional Lettering	To be specified e.g.” Generator”
Additional figuring	To be specified
Coloured marks	Red, green or blue for important scale values
Coloured sector	Red, green or blue with in scale division
Logo on the dial	Non or to be specified
Overload scaling EQ 35	No overload range

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.

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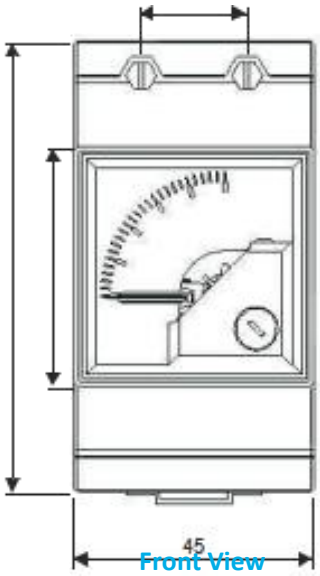
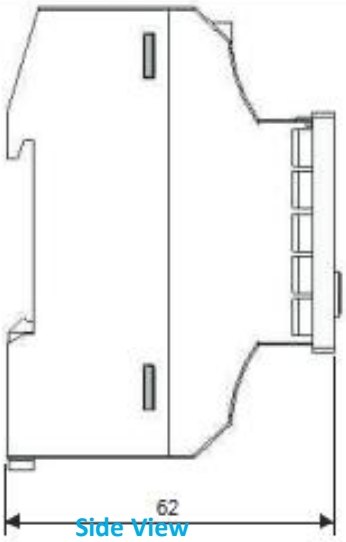
5) Bezels and window glasses may only be replaced under voltage-free conditions.

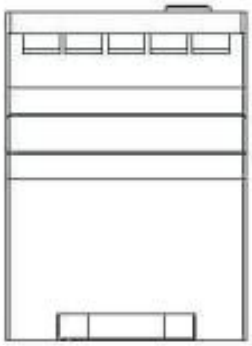
Dimensions:



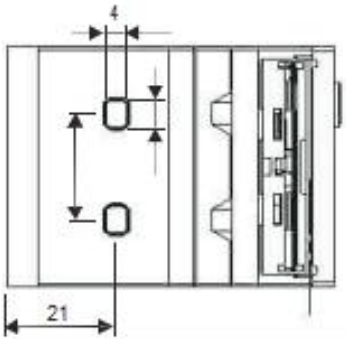
Front View



Side View



Top View



Back View

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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 | ziegler-instrument.com