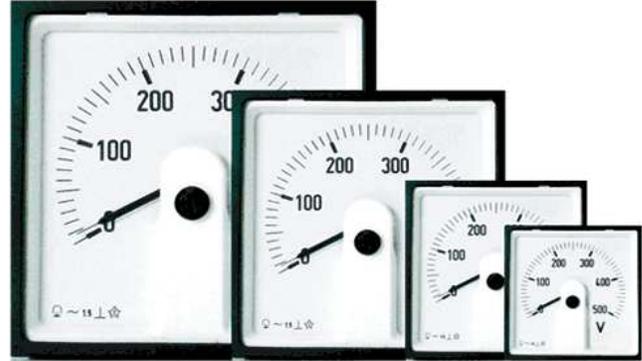


Application:

The moving coil, rectifier panel meters DGL 48/72/96/144 are housed in polycarbonate cases and are suitable for the measurement of AC currents and voltages. Moving coil rectifier instruments measure average values and are calibrated to indicate RMS values, assuming a sinusoidal waveform for frequencies from 40 to 10000 Hz (AC current - 40 to 1000 Hz and AC Voltage - 40 to 10000 Hz). These instruments offer several advantages in switchboards and generating set panels. A number of meters can be mounted in a panel cutout (mosaic mounting). Front glass, bezel and dial can be easily replaced.



Movement:

Moving coil movement has pivots of very high hardness. Movement is suspended between spring loaded sapphire jewels. Movement is properly shielded and critically damped by eddy currents induced in coil former.

Features:

- Better Resolution
- Linear Scale
- Less VA Burden
- Glass filled polycarbonate housing (UL 94-V-0)
- Knife Edge Pointer
- Easily replaceable glass and bezel

Applicable Standards:

Nominal case and cutout dimensions for indicating measuring instruments.

Scale and pointer for electrical measuring instruments.

Connections and terminal markings for panel meters.

Terminal bolts/leads.

Safety requirements and protective measures for electrical indicating instruments and their accessories.

Performance specifications for direct acting indicating analog electrical measuring instruments and their accessories.

IS 2419 DIN IEC 61554

IS 1248 DIN 43802

IS 1248 DIN 43807

DIN 46200/46282

IS 9249 DIN 40050 VDE 0110

VDE 0410 IEC 529, IEC 1010

IS 1248 IEC 51/DIN EN 60051

DIN 43701 IS 1248 IS: 9000

VDE/VDI 3540

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Applicable Standards Cont.:

Front frames for indicating measuring instruments principle dimensions.

DIN 43718

UL Combustibility class.

UL 94 V-0

Technical conditions of delivery for electrical instruments.

DIN 43701

Mechanical strength (free fall test, vibration test)

IS 1248 IS 9000 VDE 0411

IEC 1010

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

Scale and Pointer:

Pointer	Knife-edge pointer			
Pointer Deflection	0...240°			
Scale Characteristics	Linear			
Scale Division	Coarse - Fine			
Scale Length	DGL48	DGL72	DGL96	DGL144
	70mm	106mm	142mm	230mm
Scale Interchangeability	Interchangeable			

Mechanical Data:

Case Details	Molded square case suitable for mounting in control/switchgear panels, machinery consoles
Case Material	Polycarbonate, flame retardant and drip proof as per UL 94 V-0
Front Fascia	Glass
Color of Bezel	Black
Position of Use	Vertical
Panel Fixing	Mounting Clamp
Mounting	Stackable in a single cutout
Panel Thickness	≤ 25 mm

Terminals:

Voltmeters and Ammeters < 10A	Hexagon studs, M4 screws and wire clamps E3 (DIN 46282)
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Electrical Data:

Measured Quantity	AC Voltage or Current
Overload Capacity	(acc. To IS: 1248/IEC 51)
Continuously	1.2 times rated voltage/current
Short Duration	2 times, 5 sec max: 1 overload 10 times, 0.5 sec max: 9 overload
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	660 V
Proof Voltage Testing	2 kV
Installation Category	300 VCAT III
Insulation Resistance	> 50 Mohm at 500 V d.c.

Accuracy at Reference Conditions:

Accuracy Class	1.5 according to IS: 1248 (IEC 51/DIN EN 60051)
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Reference Conditions:

Ambient Temperature	23°C ± 2°C
Position of Use	Nominal position ± 1°
Input	Rated value of measured quantity
Other Conditions	IS: 1248 (IEC 51/DIN EN 60051)

Nominal Range of Use:

Ambient Temperature	IS: 1248 (IEC 51/DIN EN 60051)
Position of Use	Vertical ± 5°
Frequency	40.5...71.5 Hz
External Magnetic Field	At 0.4 kA/m

Environmental Conditions:

Climatic Suitability	Climatic category II as per IS: 1248 (climatic class 3 according to VDE/VDI 3540)
Operating Temperature	-10.... + 55°C
Storage Temperature	-25.... + 65°C

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Environmental Conditions Cont.:

Relative Humidity	≤75% annual average, non-condensing
Shock Resistance	15g _n for pulse duration 11 ms
Vibration Resistance	10-55-10 Hz for ampli. 0.15mm (1.5 g at 50 Hz)
Pollution Degree	2

Options:

Case

Front Fascia	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

Other

Increased Sensitivity	4kohm/V for voltmeters 1...600V 10kohm/V for voltmeters 15...150V
Adjustment of Resistance (Sensitivity)	Within ± 1% at 23°C

Standard Measuring Ranges:

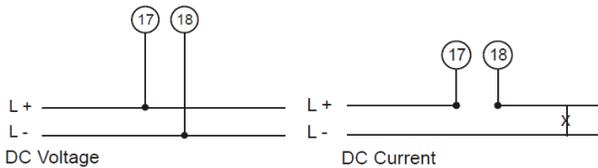
A. C. Current		A. C. Voltage	
Rated Value	Approx Voltage drop	Rated Value	Sensitivity (+ 10%)
100 mA	1.8 V	6 V	900 ohm/ V
1 A	75 mV	10 V	900 ohm/ V
5 A	75 mV	15 V	900 ohm/ V
10 A	75 mV	25 V	900 ohm/ V
		30 V	900 ohm/ V
		40 V	900 ohm/ V
		60 V	900 ohm/ V
		100 V	900 ohm/ V
		150 V	900 ohm/ V
		250 V	900 ohm/ V
		300 V	900 ohm/ V
		400 V	900 ohm/ V
		500 V	900 ohm/ V
		600 V	900 ohm/ V

Accessories:

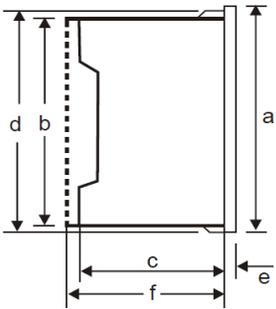
Safety Terminal Protection

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

Connections:



Dimensions:



Dimensions in mm		DGL48	DGL72	DGL96	DGL144
Bezel Case Depth	a.	48	72	96	144
	b.	43.5	66	90	136
	c.	53	53	53	53
	d.	44.5	67.5	91.5	137.5
	e.	5.5	5.5	5.5	5.5
Cutout Size		45 ^{+0.6}	68 ^{+0.7}	92 ^{+0.8}	138 ^{+0.1}
Weight (Approx.)		0.13kg	0.25kg	0.30kg	0.43kg
Depth w/back cover		f.	64	64	64

Safety Precautions:

- 1) Instruments with damaged bezel or glass 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 in to 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.

Ordering Information:

Type DGL	Moving coil with rectifier panel meter 240° scale
Front Dimension	48 48mm x 48mm 72 72mm x 72mm 96 96mm x 96mm 144 144mm x 144mm
Measuring Ranges	Refer to table inside
Front Fascia	Normal Glass * ¹ Antiglare Glass * ³ Polycarbonate Glass * ³
Color of Bezel	Black * ¹ Red, Blue, Yellow, White * ³
Position of Use	Vertical * ¹ On request 0...180°* ³
Terminal Protection	Full sized polycarbonate back cover
Zero Protection	Centre* ¹ , Off-set zero * ³
Increased Sensitivity	4 kohm/V for voltmeters 15...150V* ³ 10 kohm/V for voltmeters 15...150V* ³
Adjustment Resistance Sensitivity	Within ± 1% at 23°C * ³
Dial	Standard scale same as measuring range * ¹ Blank dial with division * ³ Additional lettering on request * ³ Additional numbering on request * ³ Colored marking red or green * ³ Colored sector red or green * ³
Logo	Jewell * ¹

*¹ Standard

*³ Please clearly add the desired specifications while ordering

Ordering Example

DGL72 measuring range 0...500V, red mark at 415 V

Specifications are subject to change without notice (1/2014)

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