

DATA SHEET



Voltmeters and Ammeters, Moving iron (type EQ)

- 90° pointer deflection
- Standard DIN sizes
- Quadratic instruments Q48, Q72, Q96, Q144

Document no.: 4921210163B

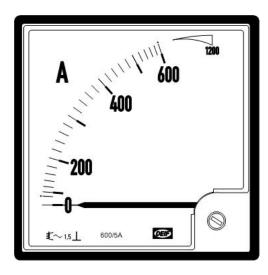
- Accuracy class 1.5
- Exchangeable scale



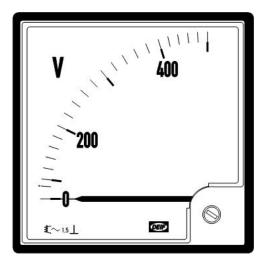
Application:

Moving-iron instruments are intended for installation in panels of power distribution or wherever AC current or AC voltages are to be measured.

The EQ measures R.M.S. values in frequency range 16 to 65 Hz (possible calibration for other frequency ranges).







Example standard EQ96, 0-500 V

Available variants:

Standard variants

Standard variants have fixed measuring ranges and scales. Neither customisation nor options are possible.

Custom variants

If you require ranges or scale designs outside our standard programme, then you must select a custom variant. Custom variants will be customised on customer request.

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Standard variants

AC voltmeters - direct measurement

Range:	EQ48	EQ72	EQ96
0-40 V	Х	Х	Х
0-60 V	Х	Х	Х
0-100 V	Х	Х	Х
0-110 V	Х	Х	Х
0-150 V	Х	Х	Х
0-250 V	Х	Х	Х
0-300 V	Х	Х	Х
0-400 V	х	Х	Х
0-500 V	х	Х	Х
0-600 V		Х	Х

AC ammeters -/1 A CT (2 times overload)

Range:	EQ48	EQ72	EQ96
0-10 A	Х	Х	Х
0-15 A	Х	Х	Х
0-25 A	Х	Х	Х
0-40 A	Х	Х	Х
0-50 A	Х	Х	Х
0-100 A	Х	Х	Х
0-150 A	Х	Х	Х
0-200 A	Х	Х	Х
0-250 A	х	х	Х
0-300 A	Х	Х	Х
0-400 A	Х	Х	Х
0-500 A	Х	Х	Х
0-600 A	Х	Х	Х
0-800 A	Х	Х	Х
0-1000 A	Х	Х	Х
0-2000 A	Х	Х	Х

AC ammeters – direct measurement (2 times overload)

Range:	EQ48	EQ72	EQ96
0-1 A	Х	Х	Х
0-1.5 A	Х	Х	Х
0-2.5 A	Х	Х	Х
0-4 A	Х	Х	Х
0-5 A	Х	Х	Х
0-6 A	Х	Х	Х
0-10 A	Х	Х	Х
0-15 A	Х	Х	Х
0-25 A	Х	Х	Х
0-40 A	Х	Х	X
0-60 A		Х	Х

AC ammeters -/5 A CT (2 times overload)

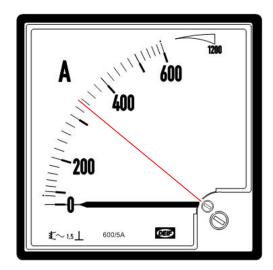
Range:	EQ48	EQ72	EQ96
0-10 A	х	Х	Х
0-15 A	х	Х	Х
0-25 A	Х	Х	Х
0-40 A	х	Х	Х
0-50 A	х	Х	Х
0-100 A	Х	Х	Х
0-150 A	х	Х	Х
0-200 A	х	Х	Х
0-250 A	х	Х	Х
0-300 A	х	Х	Х
0-400 A	х	Х	Х
0-500 A	х	Х	Х
0-600 A	х	Х	Х
0-800 A	х	Х	Х
0-1000 A	х	Х	Х
0-2000 A	Х	Х	Х

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Custom variants

	Anti-glare glass				
	Glass with red adjustable pointer (IP52 only)				
Options	IP54 protection including sealing and rubber gasket				
	Calibration certificate				
	Specific mounting angle				
	Optional graphics				
	- Coloured lines (red, green, yellow)				
	- Coloured section (red, yellow, green)				
Scale design	- Coloured figures (red, green, yellow)				
	- Application text (black, red, green, yellow)				
	- Ammeters' overload range: 3, 4, 5 or 6 times overload				
	New scale design				
	Non-standard voltage measuring range (within data sheet limits)				
Measurement	Adjusted for DC measurement for moving iron instrument				
weasurement	Adjusted to specific frequency voltage input only (100 to 500 Hz)				

Adjustable red pointer



Example: standard EQ96, 0-600/5 A (CT) user-adjustable pointer. This pointer limits the front protection to IP52.

Optional IP54 protection

This includes special sealing of the housing and a fitting gasket. The gasket itself is not enough to secure IP54 protection.

IP54 protection includes sealing and rubber gasket.

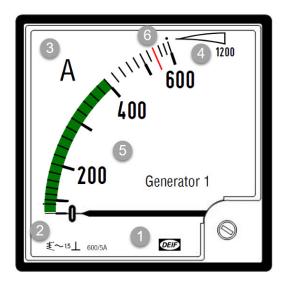
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Scale design

Optional graphics

A scale design is made with the following elements:

- Logo
 Symb Symbols
- 3. Measurement type
- 4. Measurement area and overload
- Graphic elements (extra text, coloured marking)
- Other graphical elements (red line)



New scale design

Typically, this is for customers who needs their own specific scale design or/and a design that differentiates from the DIN standard. The design is stored in the DEIF database and ensures that orders can easily be repeated.

Separate scales

As the scales are user-changeable, separate scales can be ordered separately if needed.

Technical specifications

EQ		Standards			
Type:	EQ48	EQ72	EQ96	EQ144	
	Up to 300 V AC (500 A AC ¹)				
Measuring voltage:	Stan	dard ranges: up to 600 \	/ (see standard variant	s)	
	F	or voltage transformer:	-/100 V or -/110 V AC		
Burden:		DIN 43700			
	Up to 40 A AC Up to 60 A AC				
Measuring current:	Direct m				
	For curren				
Burden:		Approx.: 0.5	to 1.2 VA		
Frequency range:	16-65 Hz				
Overload:	Continuous: I _N x 1.2, short time: I _N x 5 for 5 sec. I _N x 10 for 0.5 sec.				EN60051-2
Accuracy:		EN 00054			
	Linear scale: ±1.5 %	of full scale (FS)	Non-linear scale: ±1.	5 % of scale length	EN 60051

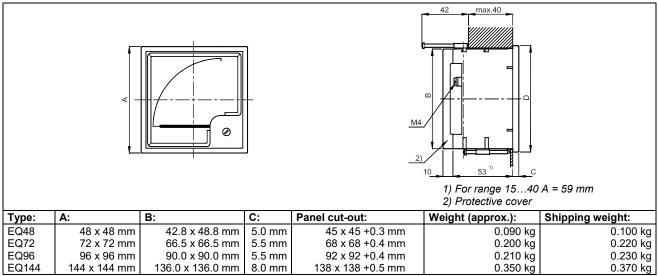
^{1:} Safety: Cat. III 300 V AC/Cat. II 600 V AC

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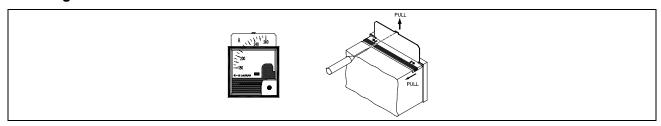
Instruments are	e designed acco	Standards			
Sizes:	Q48	Q72	Q96	Q144	
Sizes.	48 x 48 mm	72 x 72 mm	96 x 96 mm	144 x 144 mm	DIN 43700
Scale length -x :	41 mm	62 mm	92 mm	135 mm	
Bezels	Slim bezels	DIN 43718			
Scale/pointer			∃ Standard	d pointer	DIN 43802
	Standard:		Vertical (90	±5°)	
	Other angles:		Specify angl	le to horizontal	
	П	_	⊥ vertical mo	ounting	
Mounting angle		$\equiv /$	∠ _{60°} 60° (e.g.)	to horizontal	DIN 16257
	For edgewise in Horizontal or ve	struments only, f rtical scale			
Measuring ranges	Others on reque	st.			DIN 43701
Protection	Standard	d version	*) Marked with label:		
	From front	From rear	From front	From rear	"IP54 from front only when rubber gasket is
(Housings)	IP52	IP52	IP54	IP52	mounted"
	Quadratic	Edgewise	Quadratic	Edgewise	
(Terminals)	IP20	IP00	IP20	IP00	EN 60529
Climate	Max. 95 % RH: Max. 85 % RH:	rt-term condensi Max. 30 days pe Remaining days Average per yea	r year		DIN 40040
Temperature	-10 to 55°C (nor -25 to 60°C (ope -25 to 65°C (sto	erating)			EN 60051
Panel influence	thickness of the	panel	by the material n	or by the	EN 60051
Shock test	15 g - 6 times - 3 50 g/6 ms 22 g/20 ms	3 directions	IEC 68-2-27, Test: Ea		
Vibrations	3-13.2 Hz: 13.2-100 Hz:	3 mm 1 g	GL + LR: Test 1 DNV: Class A		
Materials	All plastic mater	ials are self-extir	UL94 (V0)		
Safety	Pollution deg. 2	rmation: please s ments are suppli	EN 61010-1		
EMC	CE-classified for industrial enviro		mercial and light	industry plus	EN 61000-6-3/4 EN 61000-6-1/2

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Dimensional details



Exchange of scale



- 1) Press cover at top of instrument as shown.
- 2) Remove scale by means of a suitable tool (for example a screwdriver).
- 3) After exchange of scale: refit cover (press till it snaps into place). Calibration is not needed.

Note: Interrupt signal to terminals before exchanging the scale.

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Order specifications

Variants:

Mandatory information						Additional options to the standard variant	
Item no.	Туре	Variant no.	Measuring range	Scale	VT primary/secondary	Option	Option

Example:

Mandatory information						Additional options to the standard variant	
Item no.	Type	Variant no.	Measuring range	Scale	VT primary/secondary	Option	Option
			•			Glass w/red adjustable	
2961110420-01	EQ48-x	01	0 to 400 V	0 to 400 V AC		pointer	
				0 to 500 A AC			
2961110920-03	EQ96-x	03	CT 500/5 A	(x2)		IP54	
2961110920-02	EQ96-x	02	(Determined by DEIF)	0 to 12 kV AC	11 kV/120 V AC	Red line at 10.5 kV	

Note: When ordering an EQ meter for connection via a voltage transformer (VT), both primary and secondary of the VT must be stated as shown above.

Disclaimer

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Due to our continuous development we reserve the right to supply equipment which may vary from the described.

Tel.: +45 9614 9614, Fax: +45 9614 9615
E-mail: deif@deif.com, URL: www.deif.com