
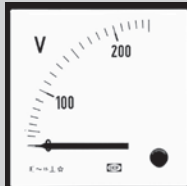





















	<b>Moving Coil, DQ</b>  (240°)	<b>Moving Coil, VDQ</b>  (90°)	<b>Moving Iron, EQ</b>  (90°)
Main function:	Measurement of DC currents and DC voltages.	Measurement of AC currents and AC voltages.	Measurement of AC currents and AC voltages, adjusted for other frequency range 16..65Hz. The instruments measure true RMS.
Size (mm):	Q48...Q144	Q72...Q144	Q48...Q144
Pointer deflection:	90°, 240°	90°, 240°	90°
Customised and exchangeable scale available for 90°:	✓	✓	✓
Protection IP52:	✓	✓	✓
Protection IP54 on request:	✓	✓	✓
Accuracy class:	1.5	1.5	1.5
Measuring range:	60mV...300V 1mA...5...10...15...40A, 4...20mA (except from Q48: 1mA..600mA, 4...20mA)	25...300V, 1...600mA	40...800V (Q48: 40...300V) 1...60A (Q48: 1...40A)
Approved by classification societies:	✓	✓	✓
	<b>Edgewise Moving Coil, DPR</b> 	<b>Slim Edgewise Moving Coil, DSM</b> 	
Main function:	Measurement of DC currents and DC voltages.	Measurement of DC currents and DC voltages.	
Size (mm):	48 x 24, 72 x 36, 96 x 48, 144 x 72 (vertical or horizontal)	72 x 24, 96 x 24, 144 x 36 (vertical or horizontal)	
Pointer deflection:	-	-	
Customised and exchangeable scale available for 90°:	✓	✓	
Protection IP52:	✓	✓	
Protection IP54 on request:	-	-	
Accuracy class:	1.5	1.5	
Measuring range:	1...600V 1...600mA, 4...20mA	60mV...600V (DSM72) 60mV...100V (DSM96) 60mV...300V (DSM144) 1...600mA, 4-20mA	




	<b>Ammeters w/built-in switch, VDQ96-sw</b>	<b>Voltmeters w/built-in switch, EQ96-sw7</b>	<b>Voltmeters w/built-in switch, EQ96-sw4</b>
			
Main function:	Measurement of AC currents. Selected with built-in switch, measurement of current in a 3-phase network is possible.	Measurement of AC voltages. Selection of measurement of phase to phase voltage or phase to zero voltage in a 3-phase network is possible by means of built-in switch.	Measurement of AC voltages. Measurement of phase to phase voltage in a 3-phase network is possible by means of built-in switch.
Size (mm):	Q96	Q96	Q96
Pointer deflection:	90°	90°	90°
Customised and exchangeable scale available for 90°:	✓	-	-
Protection IP52:	✓	✓	✓
Protection IP54 on request:	-	-	-
Accuracy class:	1.5	1.5	1.5
Measuring range:	0...1A, 0...5A or from current transformer(s) Scale: According to the used current transformer Frequency: 45...65Hz	Phase to phase voltages up to 600V or phase to zero voltages up to 350V Scale: 0...300V, 0...500V, 0...600V, 0...800V, 120V for VT - x/100V, 132V for VT - x/110V, Frequency: 40...60Hz	Phase to phase voltages up to 600V or phase to zero voltages up to 350V Scale: 0...300V, 0...500V, 0...600V, 120V for VT - x/100V, 132V for VT - x/110V, Frequency: 40...60Hz
	<b>Bimetallic Instruments, BQ</b>	<b>Combined Ammeters, BEQ</b>	
			
Main function:	Measurement of currents. Provided with a maximum-reading pointer.	Measurement of currents. Combined bimetallic system and moving iron system for maximum and momentary reading. Provided with a maximum- reading pointer.	
Size (mm):	Q48, Q72, Q96	Q72, Q96	
Pointer deflection:	90°	90°	
Customised and exchangeable scale available for 90°:	-	-	
Protection IP52:	✓	✓	
Protection IP54 on request:	-	-	
Accuracy class:	3	3 (1.5 for moving iron)	
Measuring range:	Measuring range: 0...6A or 0...1.2A Overload: 1.2 x nominal current (-/5A or -/1A) continuously Scale: Always 120% of the current transformer Setting time: BQ48: 4 or 8 min, BQ72-x/BQ96-x: 8 or 15 min	Measuring range: 0...6A or 0...1.2A Overload: 1.2 x nominal current (-/5A or -/1A) continuously Scale: Always 120% of the current transformer Setting time: Bimetallic system: 8 or 15 min	

	<b>Watt or var Meters, WQ</b> 	<b>Power Factor Meters, PFQ</b> 	<b>PT100Ohm Temperature Meters, PTQ</b> 
Main function:	Measurement of power or reactive power.	Measurement of CosPhi.	Measurement of temperature.
Size (mm):	Q96, Q144	Q96, Q144	Q96, Q144
Pointer deflection:	90°, 240°	90°, 240°	90°, 240°
Customised and exchangeable scale available for 90°:	✓	✓	✓
Protection IP52:	✓	✓	✓
Protection IP54 on request:	✓	✓	✓
Accuracy class:	1.5	1.5	1.5
Measuring range:	Frequency: 45...65Hz Measuring current: Direct or from CT -/1A or -/5A Measuring voltage: 100...110...127...220...230...240...380...400...415...440...450...480V AC	0.5 cap. ...1...0.5 ind., 0.7 cap. ...1...0.3 ind., 0...1 cap., 0...1 ind. Voltage: 57.7...63.5...100...110...124...220...230...240...380...400...415...440V AC ±20% Current (Inom): -/1A and -/5A from external current transformer	PT100 ohm sensor, 2 or 3 wire: Different ranges available within the range of 0...800°C Min. temperature difference: 25°C Min./max. temperature: -200°C/+800°C Aux. supply: 24...48...110...220V AC (AC: 1VA, DC: 15mA)
	<b>Pointer Frequency Meters, FQ</b> 	<b>Reed Frequency Meters, FTQ</b> 	<b>Shunt Resistors</b> 
Main function:	Measurement of frequency.	Measurement of frequency with 13 or 21 reeds.	Dimensions: To DIN 43703 Ranges: 1...2500A, 60/150mV Form A and B: 60/150mV Form C: 50mV
Size (mm):	Q72, Q96	Q72, Q96	-
Pointer deflection:	90°	-	-
Customised and exchangeable scale available for 90°:	✓	✓	-
Protection IP52:	✓	✓	-
Protection IP54 on request:	✓	✓	-
Accuracy class:	0.5	0.5	0.5
Measuring range:	Measuring voltage: 85...265V AC or 340...506V AC Scale/meas. range: 45...55Hz, 55...65Hz, 45...65Hz (Others on request)	Measuring voltage: 100...110...220...230...240...380...400...415...440V AC ±15% Scale/meas. range: 47...53Hz, 45...55Hz, 57...63Hz, 55...65Hz	-




	<b>Multi-instrument, MIQ96-2</b> 	<b>Multi-instrument, MIC</b> 	<b>Multi-instrument, MIB</b> 
Size (mm):	Q96	Q96	Q96
Main function:	Measurement of voltage, current, active-, reactive- and apparent power, frequency and energy import (kWh, kvarh), export (kWh, kvarh), PF, THD, MD (max. demands).	Measurement of voltage, current, active-, reactive- and apparent power, frequency, energy kWh/kvarh (import, export, net, total), PF, THD.	Measurement of voltage, current, active-, reactive- and apparent power, frequency, energy kWh/kvarh (import, export, net, total), min./max. values, PF, THD.
Connection:	Single phase 3-phase 3 wire balanced load 3-phase 4-wire balanced load 3-phase 3-wire unbalanced load 3-phase 4-wire unbalanced load	Suitable for all 3-phase network topologies	Suitable for all 3-phase network topologies
Accuracy class:	0.5 of most values 1.0 of a few values	0.2 measured values 0.5 calculated values	0.5% on measured values 1.0% on calculated values
Output:	RS485 serial + 2 relays Pulse output/limit switches	RS485 serial output with Modbus RTU protocol. Optional: 2 digital pulse/limit outputs + 2 relays	Optional: 2 digital pulse/limit outputs
Measuring current:	-1A or -5A	-1A or -5A	-1A or -5A
Measuring voltage:	230V AC N-Ph (400V AC Ph-Ph) 50/60Hz	230V AC N-Ph (400V AC Ph-Ph) 50/60Hz	400V AC Ph-N/690V AC Ph-Ph 50/60Hz
Auxiliary supply:	Universal AC/DC power supply 40...276V AC, 40...65Hz <5VA or 19...300V DC <5W	85...264V AC 50/60Hz / 24...48, 100...280V DC	100...415V AC 50/60Hz 24...48V DC, 100...300V DC

	<b>DIN Rail Instruments, D45</b> 	<b>DIN Rail Instruments, E45</b> 	
Main function:	Moving coil DC instrument for DIN rail mounting (35 x 15 mm).	Moving iron AC instrument for DIN rail mounting (35 x 15 mm).	
Size (mm):	Q45	Q45	
Pointer deflection:	90°	90°	
Customised and exchangeable scale available for 90°:	✓	✓	
Protection IP52:	✓	✓	
Protection IP54 on request:	-	-	
Accuracy class:	1.5	1.5	
Measuring range:	1V...300V (incl. 0...60mV/5mA) 1mA...600mA and (4...20mA)	6V...400V, 100mA...25A Standard ranges: 1...5...10...15...25A, incl. -1A and -5A for external CT	

	<b>Insulation Monitor, ADL-111Q96</b> 	<b>Selectable Insulation Monitor, SIM-Q/SIM-Q LF</b> 	<b>Insulation Monitors, AAL-111Q96</b> 
Main function:	Supervision of the insulation resistance between an insulated low-voltage distribution network and earth cable/safety cable.	Supervision of the insulation resistance between an insulated low-voltage distribution network and earth cable/safety cable.	Supervision of the insulation resistance between an insulated low-voltage distribution network and earth cable/safety cable.
Size (mm):	Q96	Q96	Q96
Selectable modes:	-	Monitoring, fault finding, test	-
Customised and exchangeable scale available:	-	✓	✓
Protection:	IP52	IP52	IP52
Accuracy class:	-	1...0Mohm scale $\pm 5\%$ of scale length 10...0Mohm scale $\pm 2\%$ of scale length	$\pm 2\%$ of scale length
Relay output:	Built-in relay can either be selected as NE or ND. Alarm set point adjustable from the rear	Built-in relay can either be selected as NE or ND. Alarm set point adjustable from the rear	Built-in relay. Alarm set point adjustable from the rear
Input:	Meas. voltage: $\pm 12\text{V DC } \pm 5\%$ (24V), $\pm 28\text{V DC } \pm 5\%$ (110, 220V) Mains voltage: 24V DC, 110V DC, 220V DC $+30\%$ $-25\%$	Meas. voltage: $\pm 28\text{V DC } \pm 5\%$ Mains voltage: Max. 690V AC $+20\%$ continuously SIM-Q: 20Hz...500Hz SIM-Q LF: 5Hz...500Hz	Meas. voltage: 12V DC $\pm 10\%$ Mains voltage: Max. 440V AC $+20\%$ continuously
Mains voltage/leakage cap.:	Selectable for either max. 1 $\mu\text{F}$ or max. 20 $\mu\text{F}$	Selectable for either max. 50 $\mu\text{F}$ or max. 500 $\mu\text{F}$	-
Auxiliary supply:	24V DC, 110V DC, 220V DC $+30\%$ $-25\%$	100...110...127 or 220...230...240 or 400...450...480V AC $\pm 20\%$ 40...70Hz ( $< 4\text{VA}$ ) 24V DC $\pm 25\%$ (appr. 4W)	110...220...380...415...440V AC $\pm 20\%$ , 45...65Hz (appr. 4VA), 24V DC $\pm 25\%$ (appr. 4W)
Approved by classification societies:	✓	✓	✓

	<b>Remote Position Indicators, PIR25-1, PIR25-2</b> 	<b>Running Hours Counters, HC48</b> 	<b>Running Hours Counters, HC36/24</b> 
Main function:	Indication of circuit breaker position or tie breaker position.	For AC or DC measuring voltage.	Synchronous motor (AC). Step motor (DC). For panel mounting.
Size (mm):	Q25	Q48 Adapter frames 55 x 55 or 72 x 72	36 x 24
Black focusing screen ("round"):	✓	-	-
White focusing screen ("square"):	✓	-	-
Frequency 50Hz or 60Hz:	-	✓	✓
Protection IP40:	-	(Special IP65 available)	✓
Accuracy class:	-	AC: 1/100 hour (36 s) DC: 1/10 hour (6 min)	-
Measuring range:	Nominal voltages: 4...48...110...230V AC/DC	Counting range: AC: 99999.99 hours / DC: 999999.9 hours Voltage: 24-110-230V AC $\pm 10\%$ and 10-48V DC, 110V DC $\pm 10\%$	Counting range: AC: 99999.99 hours / DC: 999999.9 hours - automatically resets to zero Voltage: 24...110...230V AC $\pm 10\%$ and 12...36V DC, 110V DC $\pm 10\%$ Resolution: For AC - 1/100 hours (36 s), for DC - 1/10 hours (6 min)

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