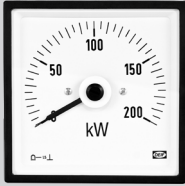











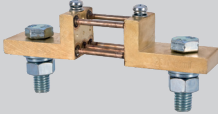
















	Moving Coil, DQ  (240°)	Moving Coil, VDQ  (90°)	Moving Iron, EQ 
Main function:	Measurement of DC currents and DC voltages.	Measurement of AC currents and AC voltages.	Measurement of AC currents and AC voltages, adjusted for other frequency range 16..65 Hz. The instruments measure true RMS.
Size (mm):	Q48...Q144	Q72...Q144	Q48...Q144
Pointer deflection:	90°, 240°	90°, 240°	90°
Customised and exchangeable scale available for 90°:	3	3	3
Protection IP52:	3	3	3
Protection IP54 on request:	3	3	3
Accuracy class:	1.5	1.5	1.5
Measuring range:	60 mV...300 V 1 mA...5...10...15...40 A, 4...20 mA (except from Q48: 1 mA...600 mA, 4...20 mA)	25...300 V, 1...600 mA	40...800 V (Q48: 40...300 V) 1...60 A (Q48: 1...40 A)
Approved by classification societies:	3	3	3
	Ammeters w/built-in switch, VDQ96-sw 	Voltmeters w/built-in switch, EQ96-sw7 	Voltmeters w/built-in switch, EQ96-sw4 
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°:	3	–	–
Protection IP52:	3	3	3
Protection IP54 on request:	–	–	–
Accuracy class:	1.5	1.5	1.5
Measuring range:	0...1 A, 0...5 A or from current transformer(s) Scale: According to the used current transformer Frequency: 45...65 Hz	Phase to phase voltages up to 600 V or phase to zero voltages up to 350 V Scale: 0...300 V, 0...500 V, 0...600 V, 0...800 V, 120 V for VT - x/100 V, 132 V for VT - x/110 V, Frequency: 40...60 Hz	Phase to phase voltages up to 600 V or phase to zero voltages up to 350 V Scale: 0...300 V, 0...500 V, 0...600 V, 120 V for VT - x/100 V, 132 V for VT - x/110 V, Frequency: 40...60 Hz

	Bimetallic Instruments, BQ 	Combined Ammeters, BEQ 	
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:	3	3	
Protection IP54 on request:	–	–	
Accuracy class:	3	3 (1.5 for moving iron)	
Measuring range:	Measuring range: 0...6 A or 0...1.2 A Overload: 1.2 × nominal current (-/5 A or -/1 A) 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...6 A or 0...1.2 A Overload: 1.2 × nominal current (-/5 A or -/1 A) continuously Scale: Always 120% of the current transformer Setting time: Bimetallic system: 8 or 15 min	
	Watt or VAR Meters, WQ 	Power Factor Meters, PFQ 	
Main function:	Measurement of power or reactive power.	Measurement of CosPhi.	
Size (mm):	Q96	Q96, Q144	
Pointer deflection:	90°, 240°	90°, 240°	
Customised and exchangeable scale available for 90°:	3	3	
Protection IP52:	3	3	
Protection IP54 on request:	3	3	
Accuracy class:	1.5	1.5	
Measuring range:	Frequency: 45...65 Hz Measuring current: Direct or from CT -/1 A or -/5 A 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 (I _{nom}): -/1 A and -/5 A from external current transformer	

	Pointer Frequency Meters, FQ 	Reed Frequency Meters, FTQ 	Shunt Resistors 
Main function:	Measurement of frequency.	Measurement of frequency with 21 reeds.	Dimensions: To DIN 43703 Ranges: 1...2500 A, 60/150 mV Form A and B: 60/150 mV Form C: 50 mV
Size (mm):	Q72, Q96	Q96	–
Pointer deflection:	90°	–	–
Customised and exchangeable scale available for 90°:	3	3	–
Protection IP52:	3	3	–
Protection IP54 on request:	3	3	–
Accuracy class:	0.5	0.5	0.5
Measuring range:	Measuring voltage: 100...230V AC ±15% or 440V AC ±15% Scale/meas. range: 45...55 Hz, 55...65 Hz, 45...65 Hz, 360...440 Hz (Others on request)	Measuring voltage: 100...110...220... 230...240...380...400...415... 440V AC ±15% Scale/meas. range: 45...55 H, 55...65 Hz	–

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

	Insulation Monitor, ADL-111Q96 	Selectable Insulation Monitor, SIM-Q/SIM-Q LF 	Insulation Monitor, AAL-111Q96 
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:	–	3	3
Protection:	IP52	IP52	IP52
Accuracy class:	–	1..0 Mohm scale $\pm 5\%$ of scale length 10..0 Mohm scale $\pm 2\%$ of scale length	$\pm 2\%$ of scale length
Relay output:	Built-in relay can be selected as NE or ND. Alarm setpoint adjustable from the rear	Built-in relay can be selected as NE or ND. Alarm setpoint adjustable from the rear	Built-in relay can be selected as NE or ND. Time delay of 4 s can be selected. Alarm setpoint adjustable from the rear
Input:	Meas. voltage: $\pm 12\text{V DC } \pm 5\%$ (24 V), $\pm 28\text{V DC } \pm 5\%$ (110, 220 V) 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: 20 Hz...500 Hz SIM-Q LF: 5 Hz...500 Hz	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. $500\mu\text{F}$	–
Auxillary supply:	24V DC, 110V DC, 220V DC $+30\%$ -25%	100...110...127 or 220...230...240 or 400...450...480V AC $\pm 20\%$ 40..70 Hz ($< 4\text{ VA}$) 24V DC $\pm 25\%$ (appr. 4 W)	110...220...380...415...440V AC $\pm 20\%$, 45...65 Hz (appr. 4 VA)
Approved by classification societies:	3	3	3
	Remote Position Indicators, PIR25-1, PIR25-2 	Running Hours Counters, HC48 	Running Hours Counters, HC36/24 
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 55×55 or 72×72	36×24
Black focusing screen ("round"):	3	–	–
White focusing screen ("square"):	3	–	–
Frequency 50 Hz or 60 Hz:	–	3	3
Protection IP40:	–	(Special IP65 available)	3
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)

	DIN Rail Instruments, D45 	DIN Rail Instruments, E45 	DIN Rail Instruments, B45 
Main function:	Moving coil DC instrument for DIN rail mounting (35 × 15 mm).	Moving iron AC instrument for DIN rail mounting (35 × 15 mm).	Bimetallic instrument with maximum reading pointer. For DIN rail mounting (35 × 15 mm).
Size (mm):	Q45	Q45	Q45
Pointer deflection:	90°	90°	90°
Customised and exchangeable scale available for 90°:	3	3	3
Protection IP52:	3	3	3
Protection IP54 on request:	–	–	–
Accuracy class:	1.5	1.5	3.0
Measuring range:	1 V...300 V (incl. 0...60 mV/5 mA) 1 mA...600 mA and (4...20 mA)	6 V...400 V, 100 mA...25 A Standard ranges: 1...5...10...15...25 A, incl. -1 A and -5 A for external CT	Nominal current -/5 A. Overload: 1.2 × nominal current continuously. Scale: Always 120% of the current transformer. Setting time: 8 min
	Alarm Panels, AL8-2 		
Main function:	Suitable for switchboards in industrial and marine plants for alarm and control purposes.		
Size (mm):	Q96		
Selectable modes:	–		
Customised and exchangeable scale available:	–		
Protection:	IP40		
Accuracy class:	–		
Relay output:	Two user-configurable output relays One output for horn (alarm)		
Input:	8 alarm inputs		
Mains voltage/leakage cap.:	–		
Auxiliary supply:	12...24...48...110V DC ±25% (min. 10V DC)		
Approved by classification societies:	3		