

EQ - Quadratic moving iron instrument

• **Main function:** The EQ is applied to measure AC currents and voltages, adjusted for other frequency ranges 16...65Hz. EQ instruments measure true RMS.

• **Working range:** Ammeters are designed with a 2 times overload range. The instruments will withstand starting currents up to 10 times normal load for 5 secs and 5 times continuously.

- **Pointer deflection:** 90°
- **Protection:** IP52 (IP54 on request)
- **Burdens:** Voltmeters $\approx 1.5..4VA$
- **Accuracy class:** 1.5
- Ammeters $\approx 0.5..1.2VA$



Type	Size (mm)	Measuring range (V)	Measuring range (A)
EQ48-x	48 x 48	40V ... 300V AC	1A ... 40A
EQ72-x	72 x 72	40V ... 800V AC	1A ... 60A
EQ96-x	96 x 96	40V ... 800V AC	1A ... 60A
EQ144-x	144 x 144	40V ... 800V AC	1A ... 60A

DQ - Quadratic moving coil instrument

• **Main function:** The DQ is applied to measure DC currents and DC voltages.

• **Scale:** Linear

• **Pointer deflection:** 90°, 240°

- **Burdens:** Voltmeters -1mA, Ri:1k Ω /V
- Ammeters -60mV..0.5V
- Ammeters -4...20mA (electrically suppressed, voltage drop at 20mA = 1.6V)

• **Protection:** IP52 (IP54 on request)

• **Accuracy class:** 1.5

• **Housings:** Plastic



Type	Size (mm)	Measuring range (V)	Measuring range (A)
DQ48-x	48 x 48	60mV ... 300V DC	1mA...600mA, 4...20mA
DQ72-x	72 x 72	60mV ... 300V DC	1mA...5-10-15-40A, 4...20mA
DQ96-x	96 x 96	60mV ... 300V DC	1mA...5-10-15-40A, 4...20mA
DQ144-x	144 x 144	60mV ... 300V DC	1mA...5-10-15-40A, 4...20mA

VDQ - Quadratic moving coil instrument with rectifier

• **Main function:** Measurement of AC currents and AC voltages. Measures average value, calibrated to R.M.S. value at sinusoidal current/voltage.

- **Pointer deflection:** 90°, 240°
- **Protection:** IP52 (IP54 on request)
- **Accuracy class:** 1.5



Type	Size (mm)	Measuring range (V)	Measuring range (A)
VDQ72-x	72 x 72	25...300V AC	1...600mA
VDQ96-x	96 x 96	25...300V AC	1...600mA
VDQ144-x	144 x 144	25...300V AC	1...600mA

VDQ96-sw - Ammeters with built-in switch

- **Main function:** Measurement of AC currents. Selected with built-in switch, measurement of current in a 3-phase network is possible.
- **Size:** 96 x 96mm
- **Pointer deflection:** 90°
- **Measuring range:** 0...1A, 0...5A or from current transformer(s).
- **Scale:** According to the used current transformer.
- **Protection:** IP52
- **Accuracy class:** 1.5
- **Frequency:** 45...65Hz



EQ96-sw4 - Voltmeters with built-in switch

- **Main function:** Measurement of AC voltages. Measurement of phase to phase voltage in a 3-phase network is possible by means of built-in switch.
- **Size:** 96 x 96mm
- **Pointer deflection:** 90°
- **Measuring range:** Phase to phase voltages up to 600V or phase to zero voltages up to 350V.
- **Protection:** IP52
- **Accuracy class:** 1.5
- **Frequency:** 40...60Hz
- **Scale:** 0...300V, 0...500V, 0...600V



DPR - Edgewise moving coil

- **Main function:** The DPR measures DC currents and DC voltages.
- **Size:** 48x24mm, 72x36mm, 96x48mm and 144x72mm (vertical or horizontal).
- **Measuring range:** 1...600V, 1...600mA, 4...20mA
- **Protection:** IP52
- **Accuracy class:** 1.5
- **90° pointer deflection**
- **Approved by classification societies**



DSM - Slim edgewise moving coil

- **Main function:** The DSM measures DC currents and DC voltages.
- **Size:** 72x24mm, 96x24mm, 144x36mm (vertical or horizontal).
- **Measuring range:** 60mV...100/300/600V, 1...600mA, 4...20mA
- **Protection:** IP52
- **Accuracy class:** 1.5
- 90° pointer deflection
- Approved by classification societies



NEQ - Zero voltage meter

- **Main function:** The zero voltage meter type NEQ is a moving iron instrument calibrated to full scale deflection at twice the nominal mains voltage, whereas 2/3 deflection corresponds to nominal mains voltage.
- **DIN standard sizes:** Q72 and Q96
- Easy-to-read scale
- Simple and thoroughly tested synchronisation supervision.



BQ - Bimetallic instrument

• **Main function:** Bimetallic instruments (maximum demand ammeters) are specifically suitable for thermal control of cables, transformers, etc. Due to the inertia of the system, the instrument is not affected by brief current pulses.

- **DIN standard sizes:** Q48, Q72, Q96
- **Measuring range/Scale:** 0...6A or 0...1.2A
- 90° pointer deflection
- **Scale:** always 120% of the current transformer
- **Protection:** IP52
- **Accuracy class:** 3.0
- Approved by classification societies
- Exchangeable scale



BEQ - Combined ammeter

• **Main function:** Specifically suited for indication of thermal loads in conjunction with cables, transformers, etc. The instrument is equipped with a bimetallic system and a moving iron system, used for maximum reading and instantaneous reading respectively.

- **DIN standard sizes:** Q72, Q96
- **Measuring range:** 0...6A or 0...1.2A
- **Scale:** always 120% of the current transformer
- **Protection:** IP52
- **Accuracy class:** 3.0 (1.5 for moving iron)
- 90° pointer deflection



2EQ96 - Double voltmeter

• **Main function:** The 2EQ consists of 2 mutually independent moving iron systems with a joint scale. Point of rotation of pointer for both systems at lower right corner.

- **Size:** 96 x 96mm
- **Measuring range/Scale:** 0...150/250/500V
- **Protection:** IP52
- **Accuracy class:** 1.5
- **Frequency:** 50 or 60Hz



2EVQ - Double voltmeter

• **Main function:** The 2EVQ consists of 2 moving iron systems mounted diagonally in one housing.

- **Size:** 96 x 96mm
- **Measuring range/Scale:** 0...150/300/600V
- **Frequency:** 50 or 60Hz
- **Protection:** IP52
- **Accuracy class:** 1.5
- 90° pointer deflection



FQ - Pointer frequency meter

• **Main function:** Consisting of a moving coil instrument with built-in electronics for converting the frequency to a voltage signal. Accurate and linear readout. Exchangeable scale.

- **Pointer deflection:** 90°
- **Protection:** IP52 (IP54 on request)
- **Accuracy class:** 0.5
- **Sizes(mm):** 72 x 72 (**FQ72-x**)
96 x 96 (**FQ96-x**)
- **Measuring range/Scale:** 45...55 / 55...65Hz / 45...65 Hz
- **Measuring voltage:** 85...265V AC or 340...506V AC



FTQ - Reed frequency meter

• **Main function:** Reed frequency meter, with one row of metal reeds vibrating at the applied frequency (resolution: ¼Hz). Available with 13 or 21 reeds. Exchangeable scale.

- **Protection:** IP52 (IP54 on request)
- **Accuracy class:** 0.5
- **Sizes(mm):** 72 x 72 (**FTQ72-x**)
96 x 96 (**FTQ96-x**)
- **Measuring range/Scale:** 45...55 / 55...65Hz / 47...53 / 57...63 Hz
- **Measuring voltage:** 100-110-220-230-240-380-400-415-440V AC ±15%



2FQ - Double pointer frequency meter

• **Main function:** The 2FQ consists of 2 moving coil instruments mounted diagonally in one housing. A compact instrument with accurate and linear read-out.

- **Pointer deflection:** 90°
- **Accuracy class:** 0.5
- **Size (mm):** 96 x 96 (**FQ96-x**)
- **Measuring range/Scale:** 45...55 / 55...65Hz / 45...65 Hz
- **Measuring voltage:** 85...265V AC or 340...506V AC



2FTQ - Double reed frequency meter

• **Main function:** Reed frequency meter, with one row of metal reeds vibrating at the applied frequency (resolution: ¼Hz). Available with 13 or 21 reeds. Exchangeable scale.

- **Protection:** IP52 (IP54 on request)
- **Accuracy class:** 0.5
- **Sizes(mm):** 96 x 96 (**FTQ96-x**)
144 x 144 (**FTQ144-x**)
- **Measuring range/Scale:** 45...55/ 55...65Hz / 47...53 / 57...63 Hz
- **Measuring voltage:** 100-110-220-230-240-380-400-415-440V AC ±15%



WQ - Watt or var meter

• **Main function:** The WQ measures power or reactive power and consist of a moving coil movement and a built-in electronic watt or var transducer P.C.B., housed in a standard case.

- **Pointer deflection:** 90°,240°
- **Protection:** IP52 (IP54 on request)
- **Accuracy class:** 1.5
- **Sizes(mm):** 96 x 96 (**WQ96-x**)
144 x 144 (**WQ144-x**)
- **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



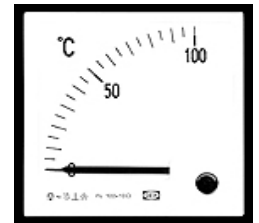
PFQ - Power factor meter

- **Main function:** The PFQ measures CosPhi and consists of a moving coil movement and an electronic transducer, housed in a standard case.
- **Pointer deflection:** 90°, 240°
- **Protection:** IP52 (IP54 on request)
- **Accuracy class:** 1.5
- **Sizes (mm):** 96 x 96 (**PFQ96-x**)
144 x 144 (**PFQ144-x**)
- **Current (Inom):** -/1A and -/5A from external current transformer
- **Measuring range:** 0.5 cap. ...1... 0.5 ind., 0.7 cap. ...1... 0.3 ind., 0...1 cap., 0...1 ind
- **Measuring voltage:** 57.7... 63.5... 100... 110... 124... 220... 230... 240... 380... 400... 415... 440V AC ±20%



PTQ - Temperature meters

- **Main function:** The PTQ is fitted with PT100 ohm sensor (2- or 3-wire) for the measurement of temperature.
- **Pointer deflection:** 90°, 240°
- **Sizes (mm):** 96 x 96
144 x 144
- Built-in lead compensation (2 wire)
- Highly resistant to transients and vibrations.



PIR25-1, PIR25-2 - Remote position indicator

- **Main function:** The position indicators types PIR25-1 and PIR25-2 provide remote indication of the position of switches, circuit breakers, tie breakers, solenoid valves, relays etc. The indicators are available in two versions. PIR25-1 offers a 'square' white focusing screen and PIR25-2 offers a 'round' black focusing screen.

