EQ METERS

Three phase 690 volt electricity meters
Extra high functionality electricity meters

The compact and versatile EQ meters A44 are three phase meters with outstanding performance. They can be used in most of the common applications for reliable and trustworthy metering of energy usage. The type A44 552-110 and A44 553-110 meters can be used for 690 Volt without any additional voltage transformers.

General features
The A series meters are ideal for many applications and installations. The meters support a wide voltage range as well as a wide temperature range. The display is pixel-oriented and can display up to four quantities at the same time. Navigating the meter is easily done via the push-buttons below the display. The same meters can be used in 3- or 4-wire installations by settings. To configure the meter settings, the set button must be accessed and this button is protected against unauthorized use when the transparent lid on the front of the meter is closed and sealed. The power consumption of the meter is low, less than 2.2 VA, makes them economical in the long run – an important feature especially for large meter populations.

Communication
Data from A44 in 690 volt version can be collected via pulse output or serial communication. The meters are equipped with a solid state output for 5-240 V AC/DC external supply. It can be used for pulses proportionally to the measured energy or various alarms. The meter is also available with built-in serial communication interfaces for Modbus RTU (RS-485) or M-Bus as option.

Tariff handling
The A44 have up to 4 tariffs that could be controlled either by the internal clock or through serial communication.

Approvals
The A44 meters are type approved according to IEC as well as type approved and verified according to Measure Instruments Directive 2014/32/EU (MID). The type approval is according to standards that covers most relevant technical aspects of the meter. These include climate conditions, electromagnetic compatibility (EMC), electrical requirements, mechanical requirements and accuracy.

Instrumentation
The extra high functionality A44 version support reading of large number of instrument values.
- Active, Reactive and Apparent power - Total and per phase
- Currents - Per phase and neutral
- Voltages - Per phase to neutral and phase to phase
- Power factors - Total and per phase
- Frequency
- Harmonics on Voltage & Currents
- Total harmonics (THD) on Voltages & Currents

Ordering detail
A44 CT/VT connected 6A, 7 DIN with IR port, 3x57.7/100, 400/690 V AC, Accuracy class C (Cl. 0.5S), Reactive Cl.2

<table>
<thead>
<tr>
<th>I/O</th>
<th>Type</th>
<th>Order code</th>
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<tbody>
<tr>
<td>CT/VT connected electricity meter, RS-485, active and reactive measurements</td>
<td></td>
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</tr>
<tr>
<td>1 + 1 fixed</td>
<td>A44 552 - 110</td>
<td>2CMA170549R1000</td>
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</table>
**Voltage/current inputs**

- **Nominal voltage**: 400 V AC
- **Voltage range**: 3 x 57.7/100 ... 400 /690 V AC (-20% - +15%)
- **Frequency**: 50 or 60 Hz ± 5%
- **Power dissipation voltage circuits**: 2.2 VA (1.0 W) total at 230 V AC
- **Power dissipation current circuits**: 0.001 VA (0.001 W) per phase at I_n/I_{ref}
- **Rated current I_n**: 1 A
- **Transitional current I_tr**: 0.05 A
- **Maximum current I_{max}**: 6 A
- **Minimum current I_{min}**: 0.01 A
- **Starting current I_{st}**: < 1 mA
- **Terminal wire area**: 0.5 - 10 mm²
- **Recommended tightening torque**: 1.2 Nm

**Communication**

- **Terminal wire area**: 0.5 - 1 mm²
- **Recommended tightening torque**: 0.25 Nm

**Transformer ratios**

- **Configurable voltage ratio (VT)**: Primary voltage 1-999999 V, secondary voltage 1-999 V
- **Configurable current ratio (CT)**: Primary current 1-9999 A, secondary current 1-9 A

**Pulse indicator (LED)**

- **Pulse frequency**: 5000 imp/kWh
- **Pulse length**: 40 ms
- **Accuracies**

  - **Accuracy Class C (Cl. 0,5 S) and reactive Cl.2**
  - **Active energy**: 0.5%

**Display**

- **Display of energy**: Pixel-oriented display (LCD, Back lighted)
- **Rows**: Up to four rows of values
- **Character size**: 6 mm (2 rows) and 4 mm (4 rows)

**Environmental**

- **Operating temperature**: -40°C to +70°C
- **Storage temperature**: -40°C to +85°C
- **Humidity**: 75% yearly average, 95% on 30 days/year
- **Resistance to fire and heat**: Terminal 960 °C, cover 650°C (IEC 60695-2-1)
- **Resistance to water and dust**: IP20 on terminal block without protective enclosure and IP51 in protective enclosure, according to IEC 60529.
- **Mechanical environment**: Class M2 in accordance with the Measuring Instrument Directive (MID), (2014/32/EU).
- **Electromagnetic environment**: Class E2 in accordance with the Measuring Instrument Directive (MID), (2014/32/EU).

**Output**

- **Current**: 2 - 100 mA
- **Voltage**: 5 - 240 V AC/DC
- **Pulse output frequency**: Programmable: 1 - 999999 imp/kWh/MWh
- **Pulse length**: Programmable: 10 - 990 ms
- **Terminal wire area**: 0.5 - 1 mm²
- **Recommended tightening torque**: 0.25 Nm

**Input**

- **Voltage**: 0 - 240 V AC/DC
- **OFF**: 0 - 5 V AC/DC
- **ON**: 57 - 240 V AC/24 - 240 V DC
- **Min. pulse length**: 30 ms
- **Terminal wire area**: 0.5 - 1 mm²
- **Recommended tightening torque**: 0.25 Nm

**EMC compatibility**

- **Impulse voltage test**: 8 kV 1.2/50 μs (IEC 60060-1)
- **Surge voltage test**: 4 kV 1.2/50 μs (IEC 61000-4-5)
- **Fast transient burst test**: 4 kV (IEC 61000-4-4)
- **Immunity to electromagnetic HF-Fields**: 80 MHz - 2 GHz at 10 V/m (IEC 61000-4-3)
- **Immunity to conducted disturbance**: 150 kHz - 80 MHz (IEC 61000-4-6)
- **Immunity to disturbance with harmonics**: 2 kHz - 150 kHz
- **Radio frequency emission**: EN 55022, class B (CISPR22)
- **Electrostatic discharge**: 15 kV (IEC 61000-4-2)

**Standards**

- IEC 62052-11, IEC 62052-31, IEC 62053-21 class 1 & 2, IEC 62053-22 class 0.5 S, IEC 62053-33 class 2, IEC 62054-21, GB/T 17215.211-2006, GB/T 17215.331-2008 class 1 & 2, GB/T 17215.332-2008 class 0.5 S, GB 4208-2008, EN 50470-1, EN 50470-3 category B & C

**Mechanical**

- **Material**: Polycarbonate in transparent front glass, bottom case, upper case and terminal cover. Glass reinforced polycarbonate in polycarbonate in terminal cover.

**Dimensions**

- **Width**: 123 mm
- **Height**: 97 mm
- **Depth**: 65 mm
- **DIN modules**: 7
- **Weight**: 0.38 kg