

Three phase electricity meters A43 and A44 EQ meters in Bronze version from ABB

The compact and versatile EQ meters A43 and A44 are three phase meters with full four quadrants measuring meaning both active/reactive energy measurements and import/export of energy. They can be used in most of the common applications for reliable and trustworthy metering of energy usage.

EQ meters A43 and A44 in Bronze version can be used in stand-alone applications or metering network installations with the option of inbuilt M-Bus or Modbus.

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. 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 very low, less than 0.8 VA, makes them economical in the long run - an important feature especially for large meter populations.

Communication

Data from A43 and A44 in Bronze version can be collected via pulse output or serial communication. The meters are equipped with a transistor output for 5-40 VDC external supply. It can be used for pulses proportionally to the measured energy or various alarms. The meters are also available with built-in serial communication interfaces for Modbus RTU (RS-485) or M-Bus as options.

Import and export measurements

B21 Bronze version measures the energy flowing both in (imported) and out (exported) through the meter and saves the energy in separate registers.

Approvals

The A43 and A44 meters are type approved according to IEC as well as type approved and verified according to MID. MID is the Measure Instruments Directive 2004/22/EC from European Commission. The type approval is according to standards that covers all relevant technical aspects of the meter. These include climate conditions, electromagnetic compatibility (EMC), electrical requirements, mechanical requirements and accuracy.



Instrumentation

The A43 and A44 meters in Bronze version support reading of instrument values.

A large number of electrical properties can be read.

- Active power - Total and per phase
- Reactive power - Total and per phase
- Apparent power - Total and per phase
- Current
- Voltage
- Power factor
- Frequency

Ordering details

80 A direct connected, 7 DIN

Voltage V	Communication	Type	Order code	Weight 1 pc
Bronze Active and reactive energy, import/export, pulse output, class B (Cl. 1), reactive Cl.2.				
3 x 57.7/100... 288/500V AC	-	A43 211 - 100	2CMA100012R1000	0.44
	RS-485	A43 212 - 100	2CMA170522R1000	0.44
	M-Bus	A43 213 - 100	2CMA170523R1000	0.44

6 A transformer CTVT connected, 7 DIN

Voltage V	Communication	Type	Order code	Weight 1 pc
Bronze Active and reactive energy, import/export, pulse output, class B (Cl. 1), reactive Cl.2.				
3 x 57.7/100... 288/500 V AC	-	A44 211 - 100	2CMA100031R1000	0.35
	RS-485	A44 212 - 100	2CMA170534R1000	0.35
	M-Bus	A44 213 - 100	2CMA170535R1000	0.35

A series

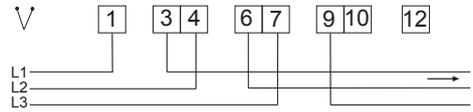
Technical data

	A43	A44
Voltage/current inputs		
Nominal voltage	3 x 230/400 V AC	
Voltage range	3 x 57.7/100 ... 288 /500 V AC (-20% - +15%)	
Power dissipation voltage circuits	0.8 VA (0.8 W) total	
Power dissipation current circuits	0.007 VA (0.007 W) per phase at 230 V AC and I_b	0.001 VA (0.001 W) per phase at 230 V AC and I_b
Base current I_b	5 A	
Rated current I_n	-	1 A
Reference current I_{ref}	5 A	-
Transitional current I_{tr}	0.5 A	0.05 A
Maximum current I_{max}	80 A	6 A
Minimum current I_{min}	0.25 A	0.01 A
Starting current I_s	< 20 mA	< 1 mA
Terminal wire area	1 - 25 mm ²	0.5 - 10 mm ²
Recommended tightening torque	3 Nm	1.5 Nm
Communication		
Terminal wire area	0.5 - 1 mm ²	
Recommended tightening torque	0.25 Nm	
Transformer ratios		
Configurable current ratio (VT)	-	1/999 - 999999/1
Configurable current ratio (CT)	-	1/9 - 9999/1
Pulse indicator (LED)		
Pulse frequency	1000 imp/kWh	5000 imp/kWh
Pulse length	40 ms	
General data		
Frequency	50 or 60 Hz ± 5%	
Accuracy Class	B (Cl. 1) or reactive Cl. 2	
Active energy	1%	
Display of energy	Pixel oriented	
Environmental		
Operating temperature	-40°C - +70°C	
Storage temperature	-40°C - +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), (2004/22/EC).	
Electromagnetic environment	Class E2 in accordance with the Measuring Instrument Directive (MID), (2004/22/EC).	
Outputs		
Current	2 - 100 mA	
Voltage	5 - 40 V DC	
Pulse output frequency	Programmable: 1 - 999999 imp/kWh	
Pulse length	Programmable: 10 - 990 ms	
Terminal wire area	0.5 - 1 mm ²	
Recommended tightening torque	0.25 Nm	
EMC compatibility		
Impulse voltage test	6 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 62053-21 class 1 & 2, IEC 62053-23 class 2, IEC 62054-21, GB/T 17215.211-2006, GB/T 17215.321-2008 class 1 & 2, GB 4208-2008, EN 50470-1, EN 50470-3 category B.	
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	

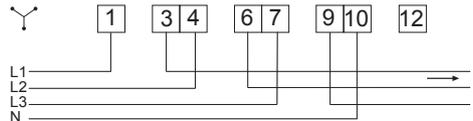
Wiring diagram

A43

3 wire connection, 2 elements

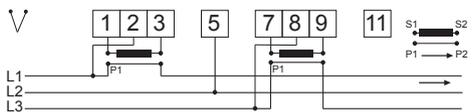


4 wire connection, 3 elements

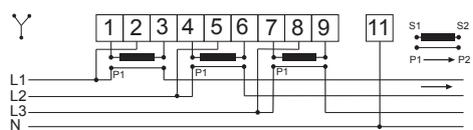


A44

3 wire connection, 2 elements



4 wire connection, 3 elements



Dimensions

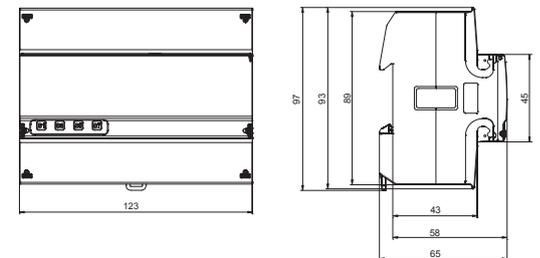


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Meters

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