

# Single phase electricity meters A41 and A42 EQ meters in Bronze version from ABB

The compact and versatile EQ meters A41 and A42 are single 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 A41 and A42 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 A41 and A42 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 A41 and A42 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 stan-



dards that covers all relevant technical aspects of the meter. These include climate conditions, electromagnetic compatibility (EMC), electrical requirements, mechanical requirements and accuracy.

## Instrumentation

The A41 and A42 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, 4 DIN

Voltage V	Communication	Type	Order code	Weight 1 pc
<b>Bronze</b> Active and reactive energy, import/export, pulse output, class B (Cl. 1), reactive Cl.2.				
57.7...288 V AC	RS-485	A41 212 - 100	2CMA170501R1000	0.23

6 A transformer CTVT connected, 4 DIN

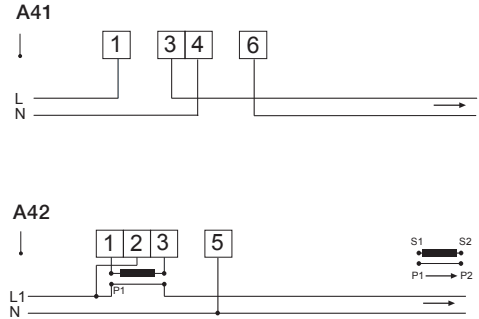
Voltage V	Communication	Type	Order code	Weight 1 pc
<b>Bronze</b> Active and reactive energy, import/export, pulse output, class B (Cl. 1), reactive Cl.2.				
57.7...288 V AC	RS-485	A42 212 - 100	2CMA170511R1000	0.20

# A series

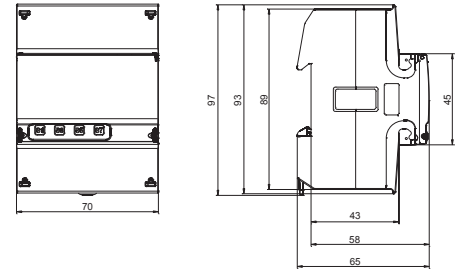
## Technical data

	A41	A42
<b>Voltage/current inputs</b>		
Nominal voltage	230 V AC	
Voltage range	57.7 ... 288 VAC (-20% - +15%)	
Power dissipation voltage circuits	0.8 VA (0.8 W) total	
Power dissipation current circuits	0.007 VA (0.007 W) at 230 V AC and $I_{b1}$	0.001 VA (0.001 W) at 230 V AC and $I_{b1}$
Base current $I_b$	5 A	
Rated current $I_n$	-	1 A
Reference current $I_{ref}$	5 A	
Transitional current $I_t$	0.5 A	0.05 A
Maximum current $I_{max}$	80 A	6 A
Minimum current $I_{min}$	0.25 A	0.02 A
Starting current $I_{st}$	< 20 mA	< 1 mA
Terminal wire area	1 - 25 mm <sup>2</sup>	0.5 - 10 mm <sup>2</sup>
Recommended tightening torque	3 Nm	1.5 Nm
<b>Communication</b>		
Terminal wire area	0.5 - 1 mm <sup>2</sup>	
Recommended tightening torque	0.25 Nm	
<b>Transformer ratios</b>		
Configurable current ratio (VT)	-	1/999 - 999999/1
Configurable current ratio (CT)	-	1/9 - 9999/1
<b>Pulse indicator (LED)</b>		
Pulse frequency	1000 imp/kWh	5000 imp/kWh
Pulse length	40 ms	
<b>General data</b>		
Frequency	50 or 60 Hz ± 5%	
Accuracy Class	B (Cl. 1) and reactive Cl. 2	B (Cl. 1), C (Cl. 0.5 S) or reactive Cl. 2
Active energy	1%	0.5 %, 1%
Display of energy	Pixel oriented	
<b>Environmental</b>		
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).	
<b>Outputs</b>		
Current	2 - 100 mA	
Voltage	5 - 240 V AC/DC. For meters with only 1 output, 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 <sup>2</sup>	
Recommended tightening torque	0.25 Nm	
<b>EMC compatibility</b>		
Impulse voltage test	6 kV 1.2/50µs (IEC 60060-1)	
Surge voltage test	4 kV 1.2/50µs (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 62053-22 class 0.5 S, IEC 62053-23 class 2, IEC 62054-21, GB/T 17215.211-2006, GB/T 17215.321-2008 class 1 & 2, GB/T 17215.322-2008, EN 50470-1, EN 50470-3 category A, B and C.	
<b>Mechanical</b>		
Material	Polycarbonate in transparent front glass, bottom case, upper case and terminal cover. Glass reinforced polycarbonate in polycarbonate in terminal cover.	
<b>Dimensions</b>		
Width	70 mm	
Height	97 mm	
Depth	65 mm	
DIN modules	4	

### Wiring diagram



### Dimensions



### ABB AB

#### Meters

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