Product leaflet

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

The compact and versatile EQ meters A41 and A42 are single phase meters with outstanding performance. They can be used in most of the common applications for reliable and trustworthy metering of energy usage with up to four tariffs.

EQ meters A41 and A42 in Silver version can be used in stand-alone applications or metering network installa-tions 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 Silver version can be collected via pulse output or serial communication. The meter is equipped with solid state outputs for 5-240 V AC/DC external supply. It can beused 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 A41 and A42 have up to 4 tariffs that could be controlled either by the 2 inputs or through serial communication.

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 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 A41 and A42 meters in Silver 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
- Apperent power - Total and per phase
- Current - Total and per phase
- Voltage - Total and per phase
- Power factor
- Frequency

Ordering details

80 A direct connected, 4 DIN

Voltage V	Communication	Type	Order code	Weight 1 pc
Silver Active and reactive energy, import/export, tariffs 1-4, tariff controll via inputs and communication. I/O 2 output, 2 input, class B (Cl. 1), reactive Cl. 2.				
57.7...288 V AC	-	A41 311 - 100	2CMA170502R1000	0.23
	RS-485	A41 312 - 100	2CMA170503R1000	0.23
	M-Bus	A41 313 - 100	2CMA170504R1000	0.23

6 A transformer CTVT connected, 4 DIN

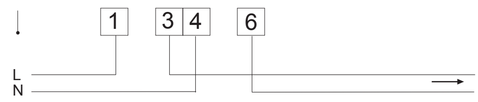
Voltage V	Communication	Type	Order code	Weight 1 pc
Silver Active and reactive energy, import/export, tariffs 1-4, tariff controll via inputs and communication. I/O 2 output, 2 input, class B (Cl. 1), reactive Cl. 2.				
57.7...288 V AC	RS-485	A42 312 - 100	2CMA170512R1000	0.20

A series
Technical data

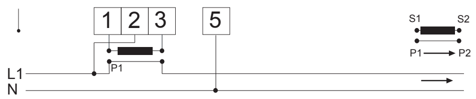
	A41	A42
Voltage/current inputs		
Nominal voltage	230 V AC	
Voltage range	57.7 ... 288 VAC (-20% - +15%)	
Power dissipation voltage circuits	0.8 VA (0.8 W) total	
Power dissipation current circuits	0.007 VA (0.007 W) at 230 V AC and I_b	0.001 VA (0.001 W) at 230 V AC and I_b
Base current I_b	5 A	-
Rated 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	0.02 A
Starting current I_{st}	< 20 mA	< 1 mA
Terminal wire area	1 - 25 mm²	0.5 - 10 mm²
Recommended tightening torque	3 Nm	1.5 Nm
Communication		
Terminal wire area	0.5 - 1 mm²	
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) and reactive Cl. 2	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 - 240 V AC/DC	
Pulse output frequency	Programmable: 1 - 999999 imp/kWh	
Pulse length	Programmable: 10 - 990 ms	
Terminal wire area	0.5 - 1 mm²	
Recommended tightening torque	0.25 Nm	
Inputs		
Voltage	0 - 240 V AC/DC	
OFF	0 - 12 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	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 62053-23 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 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	70 mm	
Height	97 mm	
Depth	65 mm	
DIN modules	4	

Wiring diagram

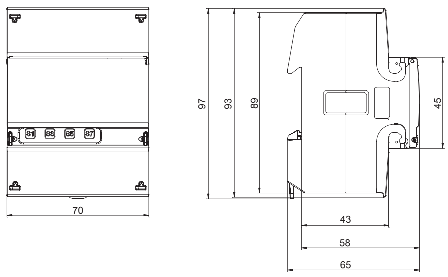
A41



A42



Dimensions



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