Product leaflet

Single phase electricity meters B21
EQ meters in Silver version from ABB

The compact and versatile EQ meters B21 in Silver version is a single phase meter with full four quadrants measuring meaning both active/reactive energy measurements, import/export of energy and tariff handling. It can be used in most of the common applications for reliable and trustworthy metering of energy usage.

EQ meters B21 in Silver version can be used in stand-alone applications or metering network installations with the option of inbuilt M-Bus or Modbus.

General features

B21 is a single phase direct connected meter up to 65 A. The B21 is measuring active energy with accuracy class B (Cl. 1) and reactive energy with accuracy class 2.
The low rated or base currents of the meter ensures high dynamic performance with superior accuracy even at low currents. Navigation of the meter is easily done via the push-buttons below the display. The exceptional low power consumption of the meter, less than 0.9 VA, makes it economical in the long run - an important feature specially for large meter populations.

Communication

Data from B21 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 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.

Approvals

The B21 meter is 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.

Tariff handling

The B21 have up to 4 tariffs that could be controlled either by the 2 inputs or through serial communication.

Instrumentation

The B21 meters support reading of instrument values.
A large number of electrical properties can be read.

- Active power
- Reactive power
- Apparent power
- Current
- Voltage
- Power factor
- Frequency

Ordering details

65 A direct connected, 2 DIN

Voltage V	Communication	Type	Order code	Weight 1 pc
Silver Active and reactive energy, import and export, 2 output, 2 input, class B (Cl. 1), reactive Cl. 2				
1 x 230 V AC	-	B21 311 - 100	2CMA100154R1000	0.14
	RS-485	B21 312 - 100	2CMA100155R1000	0.15
	M-Bus	B21 313 - 100	2CMA100156R1000	0.15

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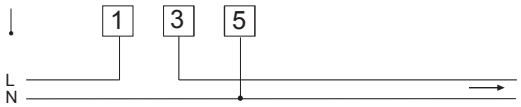
B series
Technical data

	B21
Voltage/current inputs	
Nominal voltage	230 V AC
Voltage range	220-240 VAC (-20% - +15%)
Power dissipation voltage circuits	0.9 VA (0,4 W) total
Power dissipation current circuits	0.014 VA (0.014 W) at 230 V AC and I_b
Base current I_b	5 A
Reference current I_{ref}	5 A
Transitional current I_{tr}	0.5 A
Maximum current I_{max}	65 A
Minimum current I_{min}	0.25 A
Starting current I_{st}	< 20 mA
Terminal wire area	1 - 25 mm^2
Recommended tightening torque	3 Nm
Communication	
Terminal wire area	0.5 - 1 mm^2
Recommended tightening torque	0.25 Nm
Pulse indicator (LED)	
Pulse frequency	1000 imp/kWh
Pulse length	40 ms
General data	
Frequency	50 or 60 Hz ± 5%
Accuracy Class	B (Cl. 1)
Active energy	1%
Display of energy	6 digit LCD
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 M1 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 mm^2
Recommended tightening torque	0.25 Nm
Inputs	
OFF	0 - 12 V AC/DC
ON	57 - 240 V AC/24 - 240 V DC
Min. pulse length	30 ms
Terminal wire areax	0.5 - 1 mm^2
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	4kV (IEC 61000-4-4)
Immunity to electromagnetic HF-fields	80 MHz - 2 GHz (IEC 61000-4-6)
Immunity to conducted disturbance	150kHz - 80MHz (IEC 61000-4-6)
Immunity to disturbance with harmonics	2kHz - 150kHz
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, IEC 62053-23 class 2, IEC 62054-21, GB/T 17215.211-2006, GB/T 17215.312-2008 class 1 & 2, GB 4208-2008, EN 50470-1, EN 50470-3 category B
Mechanical	
Material	Polycarbonate in transparent front glass. Glass reinforced polycarbonate in bottom case and upper case. Polycarbonate in terminal cover.
Dimensions	
Width	35 mm
Height	97 mm
Depth	65 mm
DIN modules	2

Wiring diagram B21



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This QR-code is linked to our web site www.abb.com/lowvoltage.
You will have to download a QR-code reader app to your phone in order to use it.

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