

# Single phase electricity meters B21

## EQ meters in Steel version from ABB

The compact and versatile EQ meters B21 is a single phase meters with outstanding performance. It can be used in most of the common applications for reliable and trustworthy metering of energy usage.

EQ meters B21 in Steel 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). The low rated or base currents of the meter ensures high dynamic performance with superior accuracy even at low currents. Navigation 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 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 meter is also available with built-in serial communication interfaces for Modbus RTU (RS-485) or M-Bus.

### Instrumentation

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

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

### 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.

### Ordering details

65 A direct connected, 2 DIN

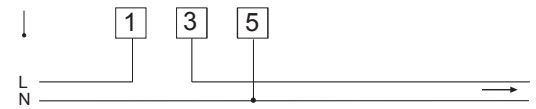
| Voltage V                                    | Communication | Type          | Order code      | Weight 1 pc |
|--|---------------|---------------|-----------------|-------------|
| <b>Steel</b>                                 |               |               |                 |             |
| Active energy, pulse output, class B (Cl. 1) |               |               |                 |             |
| 1 x 230 V AC                                 | -             | B21 111 - 100 | 2CMA100149R1000 | 0.14        |
|  | RS-485        | B21 112 - 100 | 2CMA100150R1000 | 0.15        |
|  | M-Bus         | B21 113 - 100 | 2CMA100151R1000 | 0.15        |

# B series

## Technical data

|  | B21   |
|--|---|
| <b>Voltage/current inputs</b>          |   |
| Nominal voltage                        | 230 V AC  |
| Voltage range                          | 220-240 V AC (-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 $I_T$             | 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 <sup>2</sup>  |
| Recommended tightening torque          | 3 Nm  |
| <b>Communication</b>                   |   |
| Terminal wire area                     | 0.5 - 1 mm <sup>2</sup>   |
| Recommended tightening torque          | 0.25 Nm   |
| <b>Pulse indicator (LED)</b>           |   |
| Pulse frequency                        | 1000 imp/kWh  |
| Pulse length                           | 40 ms   |
| <b>General data</b>                    |   |
| Frequency                              | 50 or 60 Hz ± 5%  |
| Accuracy Class                         | B (Cl. 1)   |
| Active energy                          | 1%  |
| Display of energy                      | 6 digit LCD   |
| <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 900 °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).   |
| <b>Outputs</b>                         |   |
| Current                                | 2 - 100 mA  |
| Voltage                                | 5 - 40 VDC.   |
| 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              | 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 62054-21, GB/T 17215.211-2006, GB/T 17215.312-2008 class 1, GB 4208-2008, EN 50470-1, EN 50470-3 category B |
| <b>Mechanical</b>                      |   |
| Material                               | Polycarbonate in transparent front glass. Glass reinforced polycarbonate in bottom case and upper case. Polycarbonate in terminal cover.            |
| <b>Dimensions</b>                      |   |
| Width                                  | 35 mm   |
| Height                                 | 97 mm   |
| Depth                                  | 65 mm   |
| DIN modules                            | 2   |

### Wiring diagram B21



### ABB AB Meters

Box 1005  
SE-611 29 NYKÖPING, Sweden  
Telephone +46 155 29 50 00  
Telefax +46 155 28 81 10

[www.abb.com](http://www.abb.com)

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