M-Bus pulse counter 2 channel

Dual serial interface card PCI

Adaptation module for consumption meters (electricity, gas, water meters) to an M-Bus system.

Order number:	020.111235
Order code:	M-Bus Impulszähler 2 Kanal

Overview:

The pulse counter M2C is used to adapt consumption devices (electricity, gas, water meters) to the M-Bus system. The measuring devices to be adapted must have a potential-free pulse output. Up to two pulse generators can be connected to the ports of the M2C at the same time. Alternatively, you can operate the heart rate adapter in tariff mode. A potential-free tariff switching signal is connected to port 2 for this purpose.

When a voltage signal is present as a tariff switch, a special, galvanically isolated input of the M2C is used. This enables the direct use of the 230V AC voltage signal from a ripple control receiver of the energy supplier.

Technical specifications:

Housing:
Mounting DIN rail mounting according to DIN EN 50022
Material ABS plastic
Color light gray (similar to Ral 7035)
W x L x H (53 x 91 x 58) mm
Protection class IP40

Environmental conditions:
Operating temperature 0 to 55 °C
Storage temperature -20 to 60 °C
Humidity (non-condensing) 10% to 70%

Requirements for the impulse contacts of the impulse generator:
Potential floating, isolation against ground > 1MΩ
Resistance open > 1MΩ, closed < 2kΩ
Maximum capacitance (incl. cable) 2nF (short current), 12nF (long current)
Minimum contact duration 30 ms
Minimum distance between 2 pulses 30 ms
Maximum pulse frequency 14 Hz

Requirements for the contacts of the tariff signal:
Potential floating, isolation against ground > 1MΩ
Resistance open > 1MΩ, closed < 2kΩ
Maximum capacitance (incl. cable) 2nF (short current), 12nF (long current)
Possible signals 50 / 60 Hz or static signal form

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230VAC tariff input:
Voltage tariff signal 100VAC to 250VAC
Frequency tariff signal 45Hz to 65 Hz
Galvanic isolation to the M-Bus 1.5 kV

PadPuls contact input:
Contact voltage 2.5V to 3.6V
Contact current 30 µA
Guaranteed debounce time 5.0 ms
Connection cable maximum 10 m (twisted pair recommended)

Power Consumption:
Principle: Remote power supply from the M-Bus with automatic switchover to battery in the event of a bus failure
Bus operation: max. 1.5 mA (1 standard load), no battery load
Battery: Standard: Lithium 3V, button cell, 230mAh Optional: Lithium 3V, type 2/3AA, 1350mAh
Battery operation: at 25°C approx. 50µA (long pulse sampling)
Battery life with a standard battery: at 25°C approx. 1/2 year of pure battery operation
  Optional battery: at 25°C approx. 3 years
Permitted battery failure days: Standard battery: at 25°C approx. 18 days per year with 10 years of operation
  Optional battery: at 25°C approx. 110 days p.a.
Short pulse sampling: With short pulse sampling, the battery life is extended by approx. 15%.

M-Bus: physical properties:
Quiescent current: M-Bus typ. 1.4 mA, maximum 1.5 mA (1 standard load)
Space(0-Bit) current: quiescent current + typ. 13 mA
M-Bus interface: TI TSS721 with 2 x 215Ω protective resistor

M bus protocol:
Standard reference: EN1434-3
Transmission speed: 300, 2400 baud with automatic detection
Addressing: Primary and secondary addressing with wildcard, per input: 1 primary and 1 secondary address
Supported functions: SND_NKE, REQ_UD2, SND_UD, standard-compliant ignoring of the FCB bit
Data structure: variable structure, low byte first (identifier 72h); Length = 53 bytes
   1. Data record: meter reading
   2. Data record: date and time
   3. Data record: last reference date
   4. Data record: last key date value
   5. Data record: next key date
   6. Data record: company-specific appendix

Parameterization protocol: Identification number, medium, primary address, pulse value, unit, initial meter reading, counting mode, tariff mode, date/time and next due date can be parameterized via SND_UD via the M-Bus or optical interface

Terminal diagram:

With the M2C, each port (or main and secondary tariff status) can be addressed via its own M-Bus primary and secondary address. So the M2C behaves like two independent M-Bus slaves! The user can configure the M2C with the help of the MBCONF program in such a way that the recorded pulses are converted into units such as kWh, m3, J or other. The MBCONF user interface makes configuration very easy. When operating on the M-Bus, the M2C is supplied with energy via this. A built-in battery ensures counting operation over a long period of time even if the M-Bus fails.

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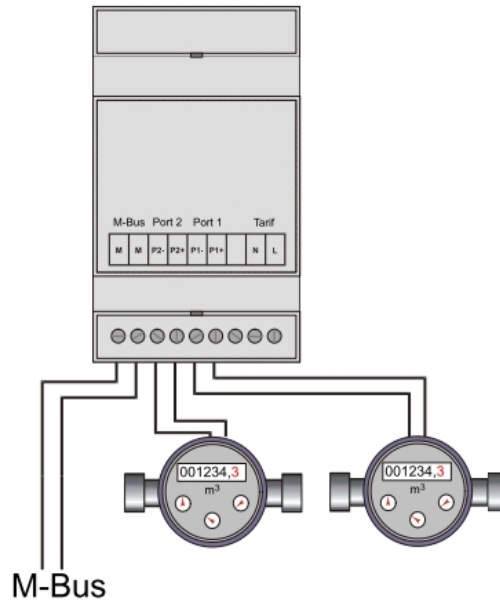
M-Bus

Scope of delivery:

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Technical specifications:

Intrastat Number:	8537.10.91.99
Country of origin	no preferential origin
Height, width, depth (in mm)	51x93x58mm