



# ADO M-Bus

## adapter for wired remote reading



### Characteristics:

Data transfer rate: 9.6kbps  
Power supply: LiSOC12 battery 3.6V, 2200mAh  
Average consumption: less than 15 $\mu$ A

### Technical characteristics:

Cable length: 1,5 m to 10 m  
Hermetically sealed casing (IP 68)  
Temperature:  
Working temperature: -10 $^{\circ}$ C to + 65 $^{\circ}$ C  
Storing: -20 $^{\circ}$ C to +65 $^{\circ}$ C  
Pulse outputs (I1 and I2)  
Open drain transistor switch according to ISO/TC30  
Vmax: 24V / Imax: 20mA / Pmax: 0,48VA / f max: 5Hz  
Max. voltage with closed switch 0,3V + I \* 250W  
If the "data" output is not used, serially connected resistance can be reduced by 150W by connecting the brown and green wire.

The pulse duration is 124 ms (fixed)

ADO M-Bus device falls into INSA group of products designed for wired remote reading. The devices are adapted for mounting on standard residential, industrial and combination water meters prepared for remote reading. The length of the cable that comes with the ADO M-Bus devices is typically 1.5 m and devices with greater cable length can be manufactured at request.

The feature of the M-Bus system is fast response, stability and reliability in functioning. When connecting the device, the ranges, i.e. cable lengths up to 300 m, are provided with one "master" device. For greater distances it is necessary to add the repeaters or increase the cross-section of the cable connecting the M-Bus system.

ADO Pulse is powered by a 2200 mAh LiSOC12 battery designed for use in telemetry. The battery ensures 15 years of device operation. High quality casing and silicone filling provide the IP68 level of protection for electronic components within the module. The device operates in all weather conditions and is fully protected against the influence of temperature, moisture and when immersed in water. Top quality silicone insulated cable is resistant to moisture and temperature influences.

### - Cables used for M-Bus networking

Cable which is typically used for connecting the M-Bus device is marked as "JY (St)Y \* 2 \* 0.8 Lg" (asterisk means "times"). This is a standard two-wire cable protected with plastic wrap and metallized plastic foil that protects the conductors from interference. The cable consists of two copper wires 0.8 mm in diameter (0.5 square in cross section), with full cross section. The cable need to have a resistance of no more than 73 ohms/km and the capacitance for a 1000-m cable should be about 180 nF.

A cable of up to 300 m in length is used for M-Bus and it is allowed to attach maximum 250 slave devices to it. Under certain circumstances, if there are fewer slaves it is possible to put longer cable but it is not recommended. For lengths greater than 300 m, repeaters shall be used.

The total resistance of conductors should not exceed 29 ohms per 350 m of this cable.