



MacSM G4

smart gas meter

Diaphragm gas meter with digital totalizer module integrated with IoT telemetry module MacSM G4 is an intelligent gas meter designed to measure the volume of the natural gas. Device contains the integrated telemetry module to send the measurement data, archives and events caused by intrusions or maintenance failures to the data acquisition system.

Gas meter can be equipped with additional features extending its billing capabilities such as remote controlled valve and temperature sensor.

Integrated battery in the device can allow it to work up to 20 years.

key benefits

- uninterrupted work in any outdoor conditions
- eco-friendly solution allowing for using less batteries for mass applications
- meter with inbuilt data logging and diagnostics module as a complex solution for billing, fraud detection and payment avoiding detection
- volume measurement design independent from magnetic interference, minimized risk of tampering
- no risk of unauthorized access to the meter on any level

Plum Sp. z o.o.
ul. Wspólna 19, Ignatki, 16-001 Kleosin, Poland
National Waste Database No.: 000009381

gas.plum.pl
gas@plum.pl

edition
1.0b, 17.09.2025



technical data

nominal size	G4, capacity of the chamber 1.2 dm ³	
connection	inch connection 1 1/4" or 7/8" according to ISO 228-1 110/ 130/ 160 mm spacing between connectors	
nominal flow rate [m³/h]	4	
q_{max} [m³/h]	6	
q_{min} [m³/h]	0.04	
basic error	± 1.5% - 0.1 Q _{max} ≤ Q ≤ Q _{max} ± 3% - Q _{min} ≤ Q < 0.1 Q _{max}	
maximum pressure [kPa]	50	
maximum pressure drop [kPa]	≤ 0.2	
volume of the measurement chamber	1.2 dm ³	
weight	up to 2.4 kg	
ambient temperature	-25 ÷ 55 °C	
enclosure protection class	IP 65	
ex (applies to design /Ex)	II 3G Ex ic IIB T3 Gc OBAC 25 ATEX 0047X	
metrology approval	EU Type examination Certificate no I-2142-MI002-TG071	
design type	design of the AFD1 gas meter with a communication module built into the gas meter in accordance with EN 16314:2013	
keypad	1 monostable button, performing the following functions: short press: navigation, long press: selection of an option	
display	alphanumeric, 2 lines, 12 characters, function and unit icons	
built-in sensors	opening of the housing cover, metrological lock	
application approval	permissible for installation in zone Z2 of explosion hazard for gases classified as group IIB	
resistance to high temperatures	T (according to EN1359)	
suitable for use in open environment	H3 (according to EN1359)	
electromagnetic environment class	E2 (the instrument may be installed in areas exposed to disturbances in industrial buildings)	
mechanical class	M1	
transmission technology	LTE Cat M1 + NB IoT	
built-in LPWAN licensed module	LTE Cat M1 B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/ B20/B25/B26/B27/B28/B66/B85 Class 5 (21 dBm +1.7/-3 dB)	NB-IoT B1/B2/B3/B4/B5/B8/ B12/B13/ B18/ B19/ B20/ B25/B28/B66/ B71/B85 Class 5 (21 dBm +1.7/-3 dB)
SIM standards supported	3FF and MFF2	
communication protocol	GAZ-MODEM (for local connections); DLMS/COSEM (for local and remote connections)	
local communication	optical interface	
power supply	single D-size battery or extended double-D battery	

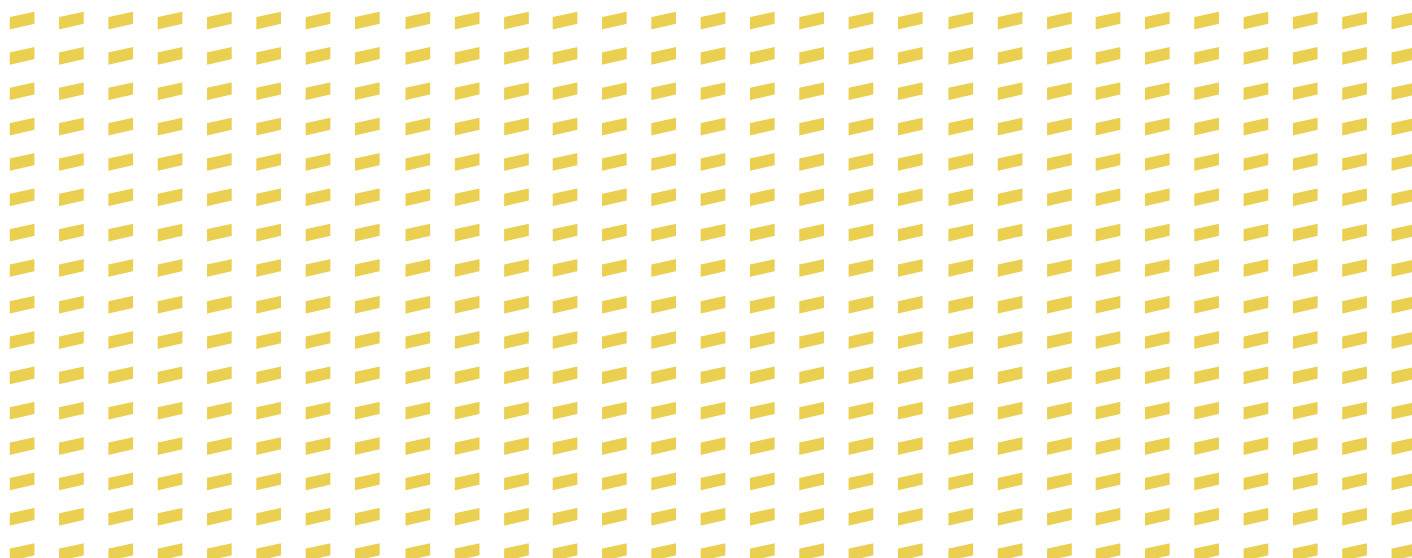
battery life

up to 20 years - the operating time depends on the profile of usage of the device, the scenario for up to 20 years of operating:

- communication every one day (daily report) without retransmission
- good or excellent signal quality
- configuration of the device - 5 times per year
- FW update - 1 time per 2 years
- display activation - 2 times per year (each time for 5 minutes)

counting process of MacSM G4

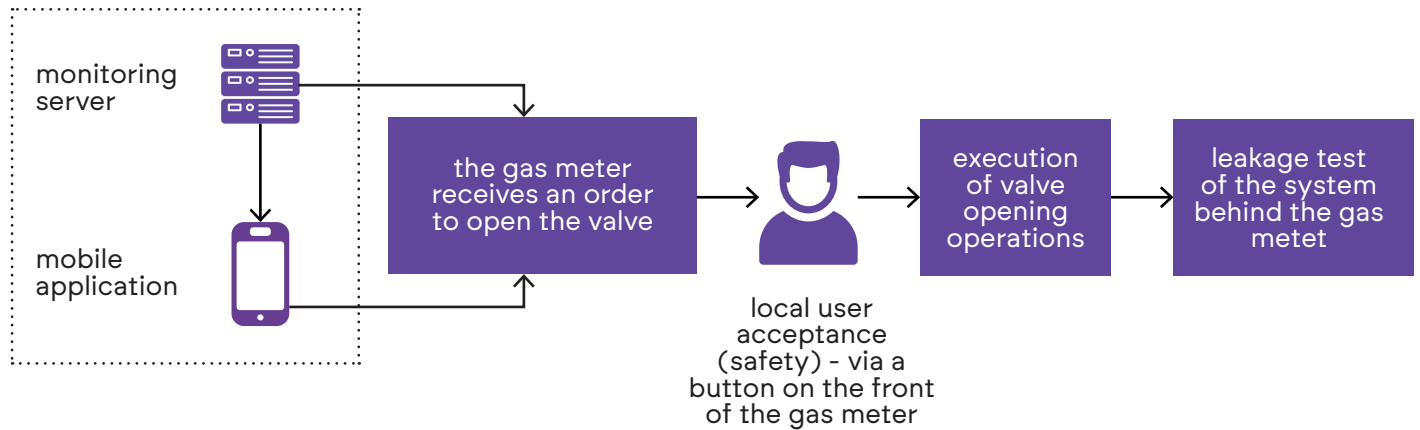
Pressurized gas is injected into the measurement chambers inside the meter. Gas fills chambers one after another. Each cycle of filling and emptying the chambers represents flow of the same amount of gas. The electronic counter records consumption data continuously, providing detailed information on flow / consumption over a specified period of time. It also provides 100% tamper resistance. The counter cannot be stopped by a magnet. The counting cannot be stopped by the end user.



valve operation

opening the valve

source issuing the open order



closing the valve

source issuing the closing order

