EKM METERING INC.

1.5" Gas Meter (EKM-PGM-150) Spec Sheet

I. Functions and Characteristics

1.) 1.5" gas flow meter for measuring gas usage in cubic feet.
2.) No power source required.
3.) Pulse output for remote reading.

II. Technical Specifications

1.) Dimensions: 12.2" Tall x 8.5" Wide x 11.2" Deep, or: 310 x 216.8 x 284mm
2.) No power source required
3.) Pulse Rate: 1 pulse per cubic foot
4.) Casing: Steel
5.) Connection Thread: NPT 1.5 Inch
6.) Inlet and outlet separation (to center): 180 mm
7.) Direction of inlet: Left in, right out
8.) Nominal flow-rate (Qn): 352.5 ft3/h
9.) Minimum flow-rate (Qmin): 35.25 ft^3/hr
10.) Maximum flow-rate (Qmax): 565 ft^3/hr or about 565,000 BTU/ hour.
11.) Minimum Operating Pressure: 0.0435 psi
12.) Maximum Operating Pressure: 4.35 psi
13.) Total pressure absorption: ≤200 Pa
14.) Cyclic: 0.07 ft^3/rev
15.) Permissible Error: Qmin ≤ Q < 0.1 Qmax ± 3%
    0.1 Qmax ≤ Q ≤ Qmax ±1.5%
16.) Min. Recording Reading: 0.07 ft^3
17.) Max. Recording Reading: 9999999.9 ft^3
18.) Readout is in cubic feet, with resolution to tenths
19.) Operating ambient temperature: -4~122 °F
20.) Service life: ≥10 years
21.) Can measure: Artificial coal gas, natural gas, liquefied petroleum gas, air, propane, inert gases or any other non-corrosive gas
22.) Weight: 9 lbs., 8 oz. Or: 4.3kg
23.) Meter design according Standards: OIML R31 or EN1359
24.) Index cover: Printed index cover of polycarbonate
25.) Surface Paint: poyester powder coat

III. Pulse Output

1.) Use in conjunction with our EKM-Omnimeter Pulse v.4 for remote metering applications.
2.) The EKM-Omnimeter Pulse v.4 has ports for three separate pulse inputs (ports 11, 12 and 13). All of the pulse input devices share a common ground wire (Port 14). These wires can be up to 200 feet long.
3.) Connect the red wire from the gas meter to either port 11, 12, or 13. Connect the yellow wire to port 14. See (Fig. 1)
4.) The easiest way to power the EKM-Omnimeter Pulse v.4 is with 110v AC. Connect a hot leg into port 7 & the neutral into port 10.
5.) For more information on how to read this meter remotely, please refer to the various communication devices that we offer on our website.

IV. Operation

This meter can be used as a traditional gas meter where you read the gas consumption off of the face of the meter. It also has the added functionality of being able to connect the pulse-output wires to a pulse counting device. This meter produces a pulse for every cubic foot (approx. every 0.0283 cubic meters) that flows by the meter. This pulse-output gas meter can be connected to our EKM-Omnimeter Pulse v.4 (see Fig. 1). The pulse counting devices can then be connected to a computer, either locally or over the internet.
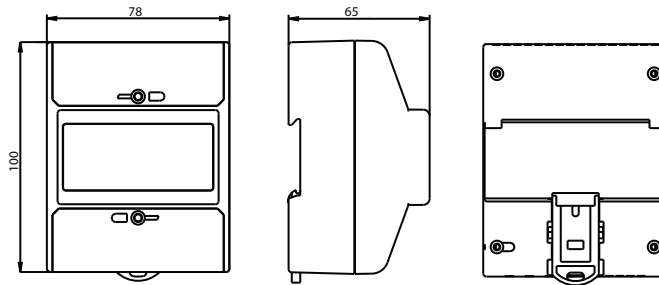
V. Installation

1.) We recommend that this meter be installed by a qualified plumber.
2.) Should be mounted vertically with the inlet/outlet pointing up.
3.) Use teflon tape or pipe dope when connecting pipe fittings to the meter's NPT pipe threads.

(Fig. 1)

EKM METERING INC.

EKM-25IDS Spec Sheet

(Fig 1)

Technical Specifications:
- 120/240V Single Phase, pass-through kWh meter
- Rated Voltage: 120/240 volts
- Rated current: 5(100)A
- Works with wires up to 3/8" in diameter
- Pulse output impulse constant: 800imp/kWh
- Range of allowable environmental conditions: Pollution Degree 2, Measurement Category III, Altitude rating 2000 meters max. Maximum Temperature Range: -30 Deg. C to 70 Deg. C.
- The equipment is protected throughout by double insulation as indicated by this symbol:
- Accuracy Class: 1 *(Fig 3)*
- Rated Frequency: 50Hz/60Hz
- Creep: Logical design of anti-creep
- Start current: 0.4% Ib. (1.0)
- Power consumption: ≤1W (when 220V, 20A)
- Tamper Detection Class 1.
- Weight: 0.32kg
- Outside dimensions: 78x100x65mm *(Fig 1)*

Safety Precautions:
- Meter should be installed by a qualified electrician.
- Turn off all power supplying the equipment before preforming any installation or service. Use a volt meter to confirm power is off.
- Use of this device inconsistent with this manual can cause permanent damage to the unit and/or serious harm to the installer or operator.

Tools/Materials List:
- Volt meter
- Small standard screwdriver
- DIN-Rail
- UL Listed Type 4 Enclosure (with appropriately rated conduit and fittings) is required if meter will be installed outdoors

Functions:
- Long-term active electricity measuring without adjustment.
- Meets IEC 62053-21 and IEC 62052-11 standards (static AC active meter)

Installation Instructions:
1. Use a volt meter to confirm that you have 240 volts between L1 and L2. This meter will not function correctly unless this is the case. For 120V systems, use our EKM-15IDS v.2, EKM-15E, or any Omnimeter model.
2. Disconnect or switch power off before attempting to install, connect, disconnect, or service the meter. ALL POWER MUST BE TURNED OFF!
3. IMPORTANT: Distinguish and then identify the 2 hot Lines and the neutral line. Label all 3: L1, L2, N.
4. Once the power has been turned off, pass line 1 and line 2 through the two holes in the meter. (for a retrofit installation this may first require disconnecting the ends of L1 and L2 from a breaker or junction box)
5. Once the wires are through the meter, the ends should be reconnected in their original positions. On the meter, tighten down the tap screws for each line that passes through the meter. The tap screws penetrate the wire insulation and power the meter once the power is turned on.
6. Mount the meter using 35mm DIN Rail in a protected indoor location. If installing outdoors, a UL Listed Type 4 Enclosure is required.
7. Once the above steps are completed, and you are ready, you can turn the power back on and begin to read your meter.
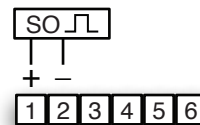
(Fig 2)

Pulse Output*(Fig 2)*:
- Terminals 1 and 2 are for pulse output. Pulse rate: 800 Impulse/kWh. Polarity sensitive. Maximum 27VDC, 27mA.
- Red LED on the meter face flashes 800 times/kWh. 1 flash = 1.25Wh.

Load current	Power factor COSθ	Basic error %		
		Class 0.5	Class 1	Class 2
0.05Ib	1.0	±1.0	±1.5	±2.5
0.1Ib~Imax	1.0	±0.5	±1.0	±2.0
0.1Ib	0.5(L)	±1.0	±1.5	±2.5
	0.8(C)	±1.0	±1.5	---
0.2Ib~Imax	0.5(L)	±0.5	±1.0	±2.0
	0.8(C)	±0.5	±1.0	---

(Fig 3)

Working Principle:

When the meter is working, the energy consumed by the user is transformed into voltage and current signals, which are sampled by sample circuits. A pulse signal is then produced by a specialized IC. The Pulse signal is directly proportional to power consumption. The MCU records and stores the corresponding energy use. The LCD screen displays the energy use.

Data:

The LCD display shows one piece of data: total electricity consumed(kWh). By design the kWh cannot be reset. The meter will go at least 10 years without power and still keep its kWh readings. In other words, the memory will not be erased if there is no power.
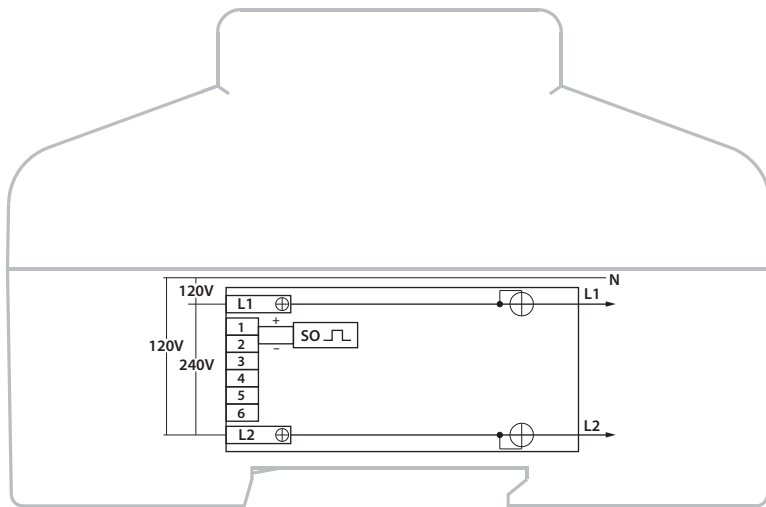
Transport and Handling:

The meter should be handled with care, as there are precision components inside that could break and/or cause faulty readings should the meter become damaged. The process of transportation, handling, and installation should be done according to the transportation and storage rule of GB/T15464-1995. Keep the meter in the original packaging when stored. The storage temperature range should be 0–40°C. The relative humidity should be ≤85%. There should be no toxic chemicals present and no corrosive substances or gases in the air. The meters should be stacked on a platform no more than ten units high.

Warranty:

Within two years from the date of sale, and on the condition that the user abide by the specifications and installation instructions listed here, and the sealing is kept completely intact. If the meter does not correspond with the rule of the enterprise standard, the meter shall be repaired free or replaced.

Wiring Diagram:

The diagram shown below is also marked on the meter body.

(Fig 4)