



manage energy better

Model 750 Gas Meter



Installation, Commissioning and Maintenance Manual

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Model 750 Gas Meter Installation, Commissioning and Maintenance Manual

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GENERAL INFORMATION

The Model 750 is a compact, aluminium case, slow revving high capacity 2 litre per cycle gas meter designed to minimise the speed of internal components to reduce wear and ensure long term accuracy retention. The Model 750 meter runs 60 % slower than a 1.2 litre per cycle gas meter.

The 750 has a designed capacity of 6m³/hr of air at 125 Pa pressure drop (7.5 m³/hr of Natural Gas SG0.62), a standard proven in Australia and worldwide, to give durable meters which maintain high levels of accuracy for many years.

SPECIFICATIONS

- **Connections:** Meter boss threads vertical inlet/outlet 10 Light 1" to BS746 1987 at 152mm (6") centres. 1" 10 Lt. to 3/4" BSP Cap Nut and Liner set available part number SK5.
- **Gases:** Natural gas, liquefied petroleum gas (LPG), simulated natural gas (SNG), tempered liquefied petroleum gas (TLP), town gas (TG), butane, propane, nitrogen, and air. For gases not listed please consult Landis + Gyr.
- **Meter Accuracy:** The high resolution adjustable tangent allows for the Model 750 to be supplied with a narrow band of accuracy, excellent turndown ratio and superior high level of accuracy at low flow rates.

The 750 is built for a service life of many years and to an initial accuracy of better than +/- 1% and typically supplied with limits of +/- 0.75% ex-factory.

- **Meter Life:** Ageing life tests have provided performance results that demonstrate the long life and high accuracy for in excess of 20 million cycles.

Exceeds the endurance testing requirements of both the European Standard EN1359:1999 and the Australian Gas Association AG702 which are in excess of the endurance testing requirements as specified in OMIL Recommendation 31.

- **Pressure Absorption:** The slow revving operation (2 litres / cycle), the low friction valve assembly and large passage ways provide the 750 with low pressure absorption of 125 Pa at 6 m³/hr air ensuring long term accuracy retention and low wear.
- **Cyclic Capacity:** 0.002 cubic metres (2 litres/rev) or 2 deci-metres per revolution.
- **Maximum Working Pressure:** 10 - 50 kPa standard operating pressure.

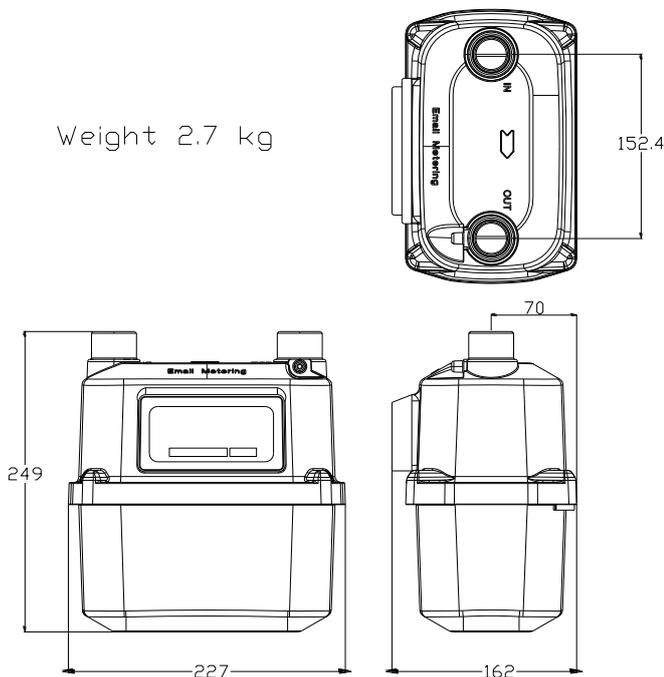
- **Index Drive:** Magnetically driven low mechanical wear index drive
- **Index Reading:** 8 wheels, 5 whole cubic metres and 3 decimal places 99999.999 cubic metres. White numbers on a black wheel for whole cubic metres and white numbers on a red wheel for the 3 decimal places.



- **Anti-Fogging Index:** Index is coated with a hydrophilic coating to prevent fogging of the meter index.
- **Bar Code:** EAN Code 128 Specification.
- **Type:** Front read or top read versions available
- **Meter Accuracy:** The 750 is built for a service life of many years and to an initial accuracy within the limits of +/- 0.75%.
- **Case Construction:** Pressure die cast aluminium alloy CA313 to AS1874-1988 alodine pre-treatment followed by baked polyester powder coat.
- **Corrosion Protection:** Chromate pre-treatment of castings followed by baked polyester powder coat for maximum corrosion protection. Provides guaranteed 1000 hour accelerated salt spray compliance to ASTM B117.
- **Operating Temperature Range:** -10 to +65 °C.
- **Meter Badge:** UV Stabilised polyester badge with serial number and customer details.
- **Outlet Tapping Point:** Meter outlet tapping point screw (M4x8mm) for pressure testing or setting is recessed to prevent accidental damage and forward facing for easy access. Suitable for 10mm ID (inside diameter) plastic tubing.
- **Security Seals:** Three red plastic (POM- Acetal) seals to prevent undetected unauthorised access.
- **Adjustable Tangent:** High resolution self locking adjustable tangent allows precision fine tuning for both meter accuracy and trend.

- **Pulse Ready Meter:** All meters are fitted with a magnet in the last index wheel and hence each meter is pulse retro fittable in the field 1 pulse / 10 lts.
- **Pulse Output Module:** 10 litres per pulse using IN-Z41 pulse module.
- **Weight:** 2.7 kg (5.95 lb.).

OVERALL DIMENSIONS



MATERIAL OF CONSTRUCTION

For more details refer to Document Number 750004 : Model 750 Material, Weight and Recyclability.

Table 1 : Materials of Construction

| | Material |
|-------------------------|----------------------------------|
| Housing | Diecast Aluminium |
| Centre Block | PBT - polybutylene terephthalate |
| Grid & Valves | PF - Phenoplastic |
| Diaphragm Plates & Pans | Steel |
| Rods, Shafts | Steel |
| Valve Guide | Steel |
| Diaphragms | Moulded PET and Elastomer |

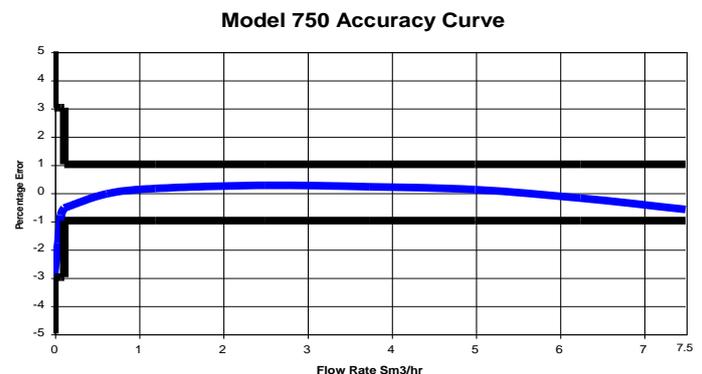
| | |
|--------------------|--|
| Index window | PC - UV Stabilised Polycarbonate |
| Red Security Seals | POM - polyoxymethylene, commonly called acetal |
| O Ring Seals | Nitrile Rubber |
| Screws | Carbon Steel with Molybond Coating |

SCREW TORQUE SPECIFICATIONS

Table 2 : Torque Specifications for Screws

| Part Number | Torque in Nm |
|---|--------------|
| Top Case Screws p/n 610019 Qty 4 | 4.5 – 5.0 |
| Tapping Point Screw p/n 204006 Qty 1 | 1.5 – 2.0 |
| Index screws p/n 750021 Qty 4 | 1.5 – 2.0 |

METER ACCURACY



The 750 is built for a service life of many years and to an initial accuracy of better than +/- 0.75% error.

Table 3 : Accuracy Band

| Flow Rate | Accuracy (% Error) |
|-------------|----------------------|
| 0.01 m3/hr | +/- 5% |
| 0.030 m3/hr | +/- 3% |
| 0.12 m3/hr | +/- 1.5% |
| 1.2 m3/hr | +/- 1% |
| 6.0 m3/hr | +/- 1% |

Gas utilities around the world are pursuing cost reductions through the adoption of "field life extension programs" in preference to the rigid statutory periods of field service of the past.

The Model 750 has a designed capacity of 6 m³/hour of air at 125 Pa pressure drop, a standard proven in Australia and worldwide, to give durable meters which maintain high levels of accuracy for many years.

LOW FLOW ACCURACY

Landis + Gyr pioneered enhanced very low flow accuracy through design and attention to detail in the manufacturing process. The model 750 meter is rated to a minimum flow rate of 10 litres per hour (0.01m³/hr) which easily records the smallest pilot flame, low consumption appliances and system leaks.

Leaks and appliance pilots operate continuously and therefore the dollar loss is significant if a meter is used which does not accurately record these low flows.

The importance of low flow accuracy is highlighted by the fact that some appliances such as storage hot water heaters etc. which provide the base load, have permanent pilot flames. Gas is consumed then 24 hours per day, however the consumption profile is such that a pilot load can account for approximately 18 hours usage. The revenue effect of low flow inaccuracy can be clearly demonstrated as shown below.

Example based upon only a 5 litre/hr (0.005 m³/hr) loss of registration: Error of only 0.005 m³/hr @ 18 hour/day pilot light = 0.09 m³/day x 365 days/year = 32.85 m³/annum per consumer.

Any claim that a smaller cyclic capacity meter (such as 1.2 dm³/cycle) is "more accurate" as it has a smaller membrane surface than that of a 2 dm³/cycle of the 750 meter is incorrect. Design construction, low friction and low pressure drop ensures low flow accuracy.

ACCURACY RETENTION

The initial accuracy of a meter is essentially easy to achieve using calibration to pass initial testing however sustained accuracy over time comes down to the quality, the design and construction of the meter.

Landis + Gyr has always recognised that the cost of changing meters in the field, coupled with repair costs, is significant, and a meter with a shorter field life also attracts other costs, including uncertain revenue collection and hidden but real cost associated with a loss of consumer confidence. The following are items of significant importance to the design of a diaphragm meter that ensures long life with sustained accuracy retention;

• CYCLIC CAPACITY

Cyclic capacity is the volume of gas passed during one (1) complete cycle of the diaphragm system within the meter.

The 750 Meter is a slow revving (2 dm³/cycle), sliding valve low friction design with large passageways which result in low pressure absorption and reduced wear. The pressure absorption across the 750 meter is 125 Pascals at a flow rate of 7.5 m³/hr of natural gas. This ensures extended field life and gives long term accuracy retention.

Countries with **high** accuracy requirements and with **statistical re-verification** procedures in place normally use only domestic G4 meters with a cyclic capacity of **2 litres per revolution**.

Countries with **low** accuracy requirements and with **no** statistical procedures in place normally use only domestic G4 meters with a cyclic capacity of **1.2 litres per revolution**.

A 1.2 litre cyclic capacity meter has to work **60%** harder than a 2 litre cyclic capacity meter at any given flow rate and hence this increased speed at which the valves move, exponentially increase their rate of wear.

For example at just 3 m³/hr = 3000 litres per hour;

- a 1.2 litre cyclic capacity meter has to rotate 2500 per hour or 41.67 times a minute.
- a 2 litre cyclic capacity meter has to rotate just 1500 times per hour or just 25 times per minute.

This is $25 / 41.67 * 100 = 60 \% \text{ More !!}$

The faster the meter revolves the higher the velocity of the valves the greater the wear rate.

The rate of wear will always be a function of the quality of the valves and valve plate, but a 1.2 litre cyclic capacity meter will wear out the valve quickly resulting in poor accuracy retention particularly at low flow rates.

• SLIDING VALVES

The 750 meter is fitted with low friction sliding valves manufactured from Phenolic Resin. This ensures extended field life, gives long term accuracy retention and ensures low flow accuracy.

The Model 750 meter is manufactured with both the valve table and valve covers lapped to a high standard. This ensures superior low flow accuracy.

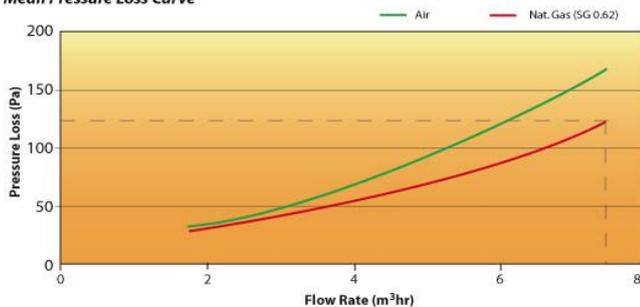
• ADJUSTABLE TANGENT

A tangent design allows precision fine tuning of both the meter accuracy and the accuracy trend (the

accuracy at Qmax relative to 20% of Qmax). The ability to set timing is an important feature of the 750 meter. Like a well tuned engine it assures both smooth operation and reduced wear.

PRESSURE ABSORPTION

Model 750
Mean Pressure Loss Curve



Pressure loss is made of two components pneumatic pressure loss (created by small passage ways and the movement of gas through the meter) and mechanical pressure loss a result of moving components.

The mean pressure absorption of the Model 750 is 125 Pascals (Pa) at a flow rate of 6.0 m³/hr of air and 125 Pascals (Pa) at a flow rate of 7.5 m³/hr of natural gas (SG 0.62).

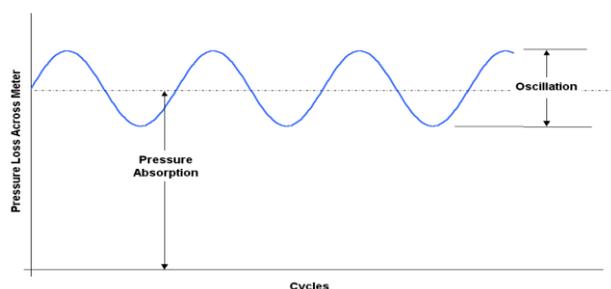
ABSORPTION AND OSCILLATION

Pressure Absorption is defined as the average difference between the inlet and outlet pressure when the meter is run on air over at least one cycle of the meters operation measured with a British Slope Gauge.

Pressure Oscillation is defined as the difference between the highest and lowest readings of a pressure gauge placed at the outlet of the meter measured with a British Slope Gauge.

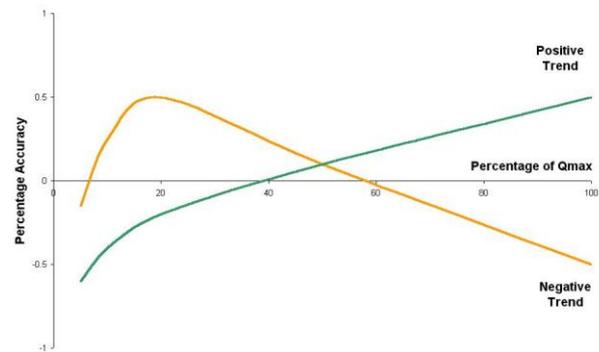
Although magnahelic and transducers can be used to determine absorption and oscillation, these devices must be calibrated to the reference standard, a the British Slope Gauge as described in AG702.

The acceptance criteria for pressure absorption is no greater than 125Pa through all flow rates and for oscillation 75Pa through all flow rates.



METER ACCURACY TREND

Trend is the accuracy at 100% Qmax minus the accuracy at 20% badge rate shown below. Normally meters are set with a negative trend rather than a positive trend due to the falling off in accuracy at low flow rates (pilot rate).



The 750 high resolution adjustable tangent allows precision fine tuning of both meter Accuracy and accuracy trend (accuracy at Qmax relative to 20% of Qmax). The ability to set timing is an important feature of the meter. Like a well tuned engine it assures smooth operation and reduced wear.

This is not available with fixed tangent meters which use gear trains for pseudo accuracy correction without provision for timing adjustment.

750's adjustment is self-locking. It ensures maintenance of factory set accuracy during transport and handling.

ENDURANCE TESTING

Ageing life tests conducted on the Model 750 meter have provided performance results that demonstrate the long life and high accuracy for in excess of 15 million cycles.

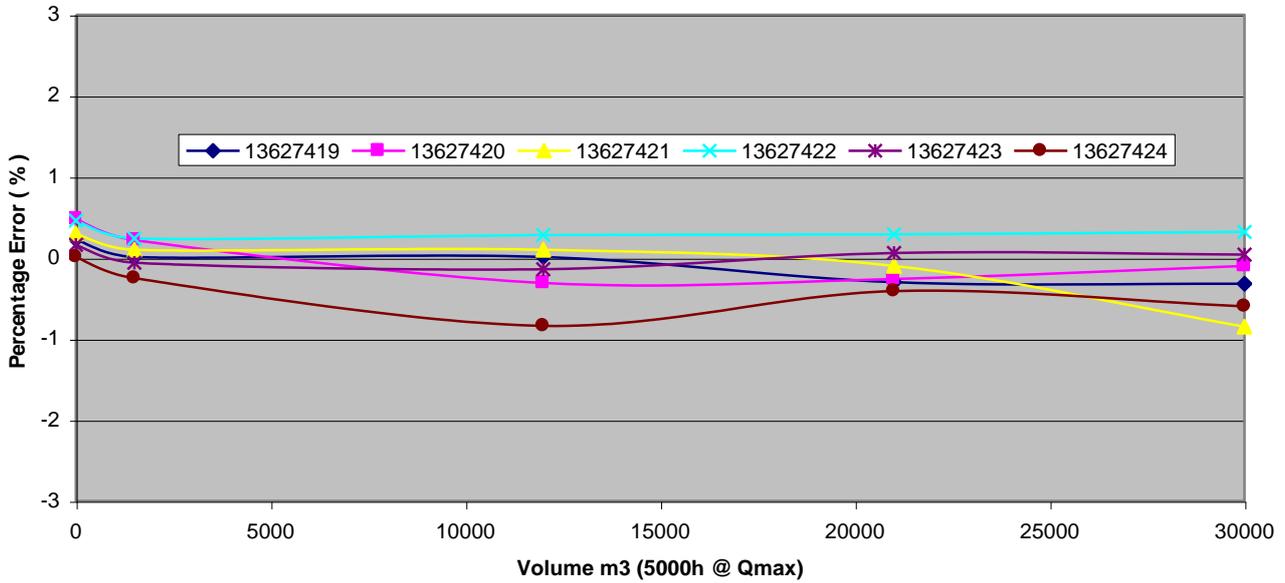
The Model 750 meter exceeds the endurance testing requirements of the European Standard EN1359:1999, American National Standard ANSI B109.1, Australian Gas Association AG702, and OMIL Recommendation 31. These standards and recommendations are summarised in Table 4 on page 7.

The endurance test results are shown on page 7 show the equivalent of 27 years in field service, assuming an annual consumption 1,100 cubic metres per annum.

The flow rate during the test was continuous at flow rate of 6 m³/hr of natural gas (SG 0.62).

INDEPENDENT ENDURANCE TESTING RESULTS

0.2 Qmax EN1359:1998 Endurance Test Results
Conducted by Independent Accredited Laboratory DVGW - Forschungstelle



Qmax EN1359:1998 Endurance Test Results
Conducted by Independent Accredited Laboratory DVGW - Forschungstelle

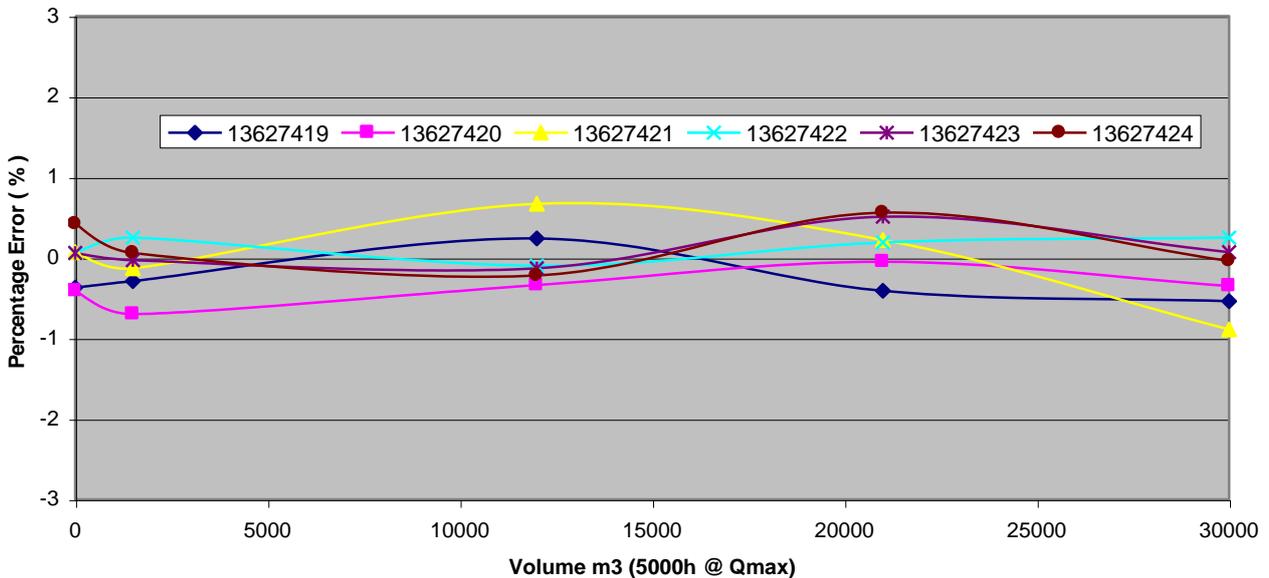


Table 4 : Endurance Standards and Recommendations

| Standards: | |
|--|--|
| European Standard EN1359:1999 | 208.3 days continuous operation at a flow 100% of Qmax meter shall not exceed +/-2% |
| American National Standard ANSI B109.1 | 166.7 days continuous operation at a flow of 80% and 120% of Qmax meter shall not exceed in field service requirements +/- 2%. |
| Australian Gas Association AG702 | 100 days continuous operation at a flow of 80% and 120% of Qmax meter shall not shift by +/-2% when tested at Qmax, 0.2Qmax and 0.015 m3/hr. |
| Recommendations: | |
| OMIL Recommendation 31 | 83.3 days continuous operation at a flow 100% of Qmax meter shall not exceed in field service requirements of +3% and -6%. |

HANDLING

The Model 750 gas meter has an externally rugged appearance, as it has been built to be installed outdoors and has to endure in all extremes of weather.

However, despite their rugged appearance, diaphragm meters are delicate measuring instruments and should be treated with a certain degree of care during handling and commissioning to ensure meter accuracy and a long service life.

Diaphragm meters should not be turned upside down, dropped, tipped over or be subjected to excessive jarring. Such occurrences could cause damage or displace to the valve covers, jar the internal mechanism or bend delicate parts.

If mishandling occurs, the meter may appear to be operating normally but the accuracy of the meter may be impaired resulting in improper measurement and loss of revenue.

STORAGE

Diaphragm meters should be stored upright, in a clean dry place and fitted with dust caps on the inlet and outlet connections. This will exclude debris that can be detrimental to the meter's internal components.

TRANSPORTATION

Diaphragm meters should be transported upright, be suitably restrained and properly cushioned to prevent the meter from tipping over. Dust caps on the inlet and

outlet connections should be left in place until installation.

INSTALLATION

These recommendations should be used in conjunction with, but not take precedence over, any regulations, codes (such as building codes, fire and safety regulations etc.) and / or requirements that have statutory jurisdiction over the application, installation, operation or general use of this product.

The installation, commissioning and maintenance of this product should ONLY be conducted by trained and qualified personnel. The incorrect handling during installation, adjustment, modification, functional testing and / or maintenance activities may cause injuries and / or material damage. Read the operation instructions prior to starting the installation. This device must be installed and monitored in accordance with the applicable statutory regulations.

1. Installation Location

The meter should only be installed in a location permissible by the relevant codes, regulations and standards applicable. In addition we recommend that the meter should NOT be installed:

- in a bedroom or living area,
- near a source of ignition,
- in an unventilated area,
- in an area where the meter may be subject to physical damage (i.e. vehicle thoroughfare) unless adequately protected,
- in a position that would obstruct egress from a building,
- in the foundation area under a building,
- in a location where access for maintenance is restricted,
- within 1.5 metres of an openable window or air vent or opening.

2. Preparation

Check for transport damage. DO NOT install a damaged meter.



DO NOT install the meter where the inlet pressure exceeds the maximum operating pressure, or at flows greater than that indicated on the meter badge.

Typically a service regulator is installed on the inlet side of the meter with suitable pressure protection to

ensure that the maximum operating pressure of the meter is not exceeded.

When the meter is used with gases high in contaminants it is recommended that a suitable filter is installed on the inlet side of the meter.

A suitable stop valve should be installed before the inlet of the meter for maintenance purposes.

Avoid installing the meter in locations where the meter casing is in direct contact with soil or concrete walls. Alkali in concrete as well as other corrosive elements in soil can cause premature corrosion of the meter casing.

3. Pipe Work Installation

Ensure that installation pipe work is thoroughly clean. Foreign materials such as pipe scale, rust flakes, excessive plumbing tape, excessive thread sealant must be removed prior to installing the meter.

The gas meter, weighing 2.7 kg, can be supported entirely by the meter bosses. It is typical for the meter to be suspended by pipe work alone.



The installer shall ensure that the pipe work does not result in excessive forces being applied to the meter bosses. The suitability of the pipe work is the responsibility of the installer.

The gas meter should be installed as close to level as possible in order to ensure accurate operation. The pipe work shall be in line with the meter bosses and not forced into position. The direction of gas flow must correspond to the arrow marked on the meter body.

Hand tighten the inlet and outlet swivel cap. Using a pipe wrench, alternate between both swivel caps nuts and tighten approximately three flats (approximately 15 - 25 Nm). **DO NOT OVER TIGHTEN.** Damage to the rubber gasket inside the swivel cap nut may result.

PUTTING INTO OPERATION

Before turning the gas on, check the system downstream of the meter to be sure that all connections are made up and tight or that the downstream valve, if there is one, is closed.



CARE must be taken to prevent excessive flows and high pressure drops across the meter.

If CARE is not exercised when pressurising the meter over-speeding of the meters internal mechanism may result in internal damage to the meter. To prevent over-speeding the pressure drop across the meter should not exceed 125 Pa or (0.5" wc). This can be achieved by pressurising the meter and the downstream pipe volume to appliances as slowly as is possible.

To avoid high differential pressure across the meter, open the upstream and downstream valves **VERY SLOWLY** to prevent any pressure surges into or out of the meter.

4. Check For Leaks



Check for leaks and check all connections for tightness. Repair all leaks as required.

Use liquid leak detector to check for leaks at the pipe connections.

5. Turn On Appliances



All air or inert gases should be safely purged from the downstream piping before any attempt is made to light an appliance.

Appliances should then be started as per the relevant appliance manufactures procedures.

SPECIAL NOTE FOR BOTTLED OR TANK LPG GAS SYSTEMS

Bottled or tank gas cylinders contain pressures of several thousand kPa and the Model 750 can be supplied as a high pressure version up to 150 kPa. This disparity means that the bottled or tank gas system (which includes regulators, relief valves and over pressure devices) must ensure that the maximum operating pressure of the meter is not exceeded.

When tank filling or connecting fully pressurised bottled gas cylinders into an empty or near empty system **EXTREME CARE** must be taken not to overload the regulator diaphragms with a sudden surge of inlet pressure (of several hundred to thousands kPa).

So called "Change-Over" regulators used in the changing of cylinders are particularly susceptible to this problem, when the gas pressure is low.

This can result in an increase in outlet pressure greater than that of the maximum operating pressure of the meter and create high differential pressures across the meter. This can result in damage to the meters diaphragms and/or internal mechanism.



To avoid high differential pressures across the meter and/or pressures exceeding the maximum operating pressure of the meter, pressurise the system **VERY SLOWLY** to prevent any pressure surges into the system.

INSPECTION & MAINTENANCE

6. Inspection Frequency

A properly installed and commissioned meter should provide many years of trouble free operation, however

inspections should be conducted as and when required.

Additional inspections may be necessary for example natural disasters, earthquakes, floods, landslides, house fires etc.

When the meter is used in adverse environments or with gases high in contaminants more frequent inspections should be conducted.

SUITABLE GASES

Model 750 Gas Meter and 300 Series Domestic Regulators are suitable for use with a variety of gases such as:

- ◆ Natural Gas,
- ◆ Methane,
- ◆ Liquefied Petroleum Gas (LPG),
- ◆ Town Gas (TG),
- ◆ Butane,
- ◆ Propane,
- ◆ Nitrogen,
- ◆ Carbon Dioxide (dry),
- ◆ Carbon Monoxide (dry),
- ◆ Aliphatic Hydrocarbons,
- ◆ Air
- ◆ and inert gases

For gases not listed please consult Landis + Gyr.

BIO-GAS

Biogas is generated when bacteria degrades biological material in the absence of oxygen, in a process known as anaerobic digestion. Biogas is produced from marshes, rubbish dumps, septic tanks and waste treatment plants. Biogas consists of large quantities of carbon dioxide, hydrogen sulphide and water. Therefore the service life will be dramatically affected accordingly.

WARNING! PURE OXYGEN

All regulators and meters supplied by Landis + Gyr are **NOT SUITABLE** for pressure regulating or measuring **PURE OXYGEN**. Special meters and regulators made from specific materials are required to prevent heat build up as a result of friction etc.

SERVICE LIFE – INTERNAL CORROSION

Service life varies according to deleterious effects of the specific gas, the level of filtration and any contaminants in the gas stream. For example gases containing water, sulphur, nitrous oxides and carbon dioxide can accelerate corrosion to an unacceptable level. Seemingly innocuous gases, under certain

conditions, are surprisingly corrosive capable of producing such compounds as carbonic acid, sulphurous acid and sulphuric acid. Nitrous oxides (NO_x) attack rubber and plastic components.

METER BAR OPTIONS

An optional meter bar is available for wall or pole mounting of a meter and / or regulator off the ground. The meter bar comes with two models 503700 (without plug cap) and 503800 (with plug cap)



Meter Bar (503800)

Table 5 : Domestic Meter Bar Options

| |
|--|
| Part Number 503700 |
| 3 x Cap Nuts (p/n 138) |
| 3 x 3/4" Liners (p/n 503606) |
| 3 x 26e Washers (p/n 26) |
| 1 x 3/4" BSP Female to 10 Lt. Male Adaptor (p/n 503-6) |
| Part Number 503800 |
| 3 x Cap Nuts (p/n 138) |
| 3 x 3/4" Liners (p/n 503606) |
| 3 x 26e Washers (p/n 26) |
| 1 x 3/4" BSP Female to 10 Lt. Male Adaptor (p/n 503-6) |
| 1 x Plug Cap(p/n 000209) |

METER CONNECTION OPTIONS

The meter boss threads are vertical inlet/outlet 10 Light 1" to BS746 1987 at 152.4mm (6") centres.

There are a variety of meter connection kits available. The standard kit is a 1" 10 Lt. Cap Nut to 3/4" BSP Liner set as detailed below.

Table 6 : SK5 Connection Kit

| |
|-----------------------------------|
| Part Number SK5 |
| 2 x Cap Nuts (p/n 138) |
| 2 x 3/4" BSP Liners (p/n 144-1) |
| 2 x 26e Washers (p/n 26) |

PULSE OUTPUT (OPTIONAL)

Pulse output is provided via a magnetically actuated voltage free reed switch contacts where the electrical instrumentation attached provides the power to detect the opening and closing of the reed switch.

All meters are fitted with a magnet in the last index wheel and hence each meter is pulse retro-fittable while in service by use of an External Pulse Module without the need to interfere with the metrology of the meter or the meter seals.

The pulse output is 1 pulse per 10 litres. No other pulse output values are available.

Picture right shows the Model 750 Meter with Fitted with IN-Z41 Pulse Output Module.

The External Pulse Module can be sealed in place using the standard lead seal, other options are available.



Table 7 : Pulse Output Modules

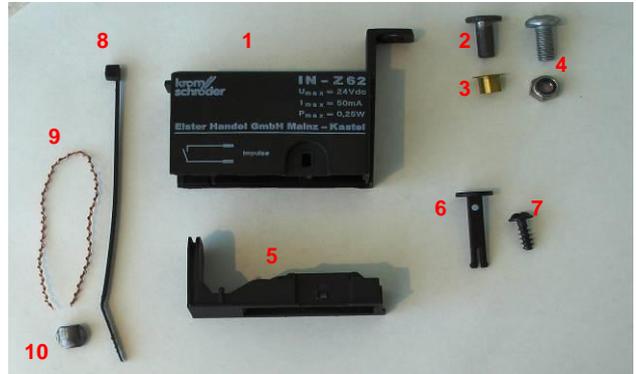
| | |
|-------------------------|---|
| Module Number | IN-Z41 |
| Part Number | 750087 |
| Number of Reed Switches | one for tamper detection and one for pulse output |
| Wire Connections | Cable and Plug Part Number 32446432 |
| Wire Coding | Green-Brown = Meter Pulse Yellow-White = Tamper Detect |
| Tamper Circuit | A normally open tamper circuit is provided to detect external tampering by magnetic interference. |
| Voltage Switching Umax | 24Vdc |
| Current Switching Imax | 50mA |
| Power Maximum Pmax | 0.25W |
| Contact Form | SPST-NO Form A Normally Open |
| | |

TO ORDER PULSE OUTPUT MODULE IN-Z41 USE P/N: **750085**

PULSE OUTPUT INSTALLATION INSTRUCTIONS

Individual Components

1. Pulse Module Housing
2. Lead Pin
3. Copper Ring – Short (Long Copper Ring supplied in kit not required)
4. Screw (15006) & BK Nut
5. Sealing Pin
6. Security Wire (Not Included)
7. Lead Seal



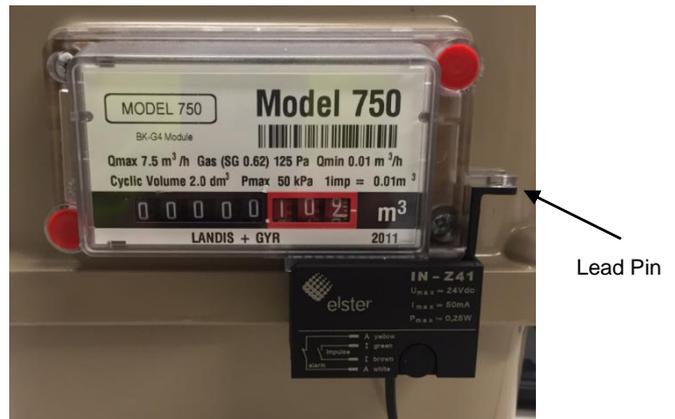
IN-Z41 Assembly

1. Push connect pulse cable into Pulse Module Housing (1)



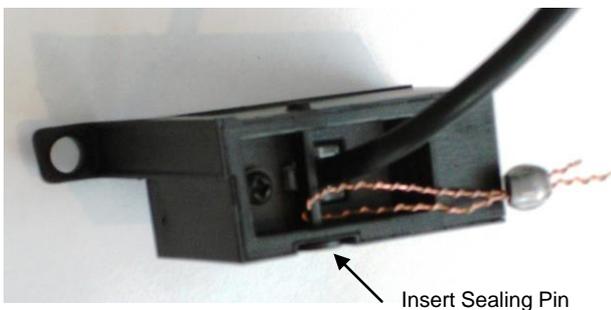
IN-Z41 Installation to Index

1. Attach the pulse module to the meter index
2. Insert Copper Ring (3) and Lead Pin (2)
3. Squash Lead Pin (2) using pliers



IN-Z41 Security Sealing Pin & Wire

1. Insert sealing Pin (6) into Pulse Module Housing (1)
2. Seal using wire length (9) and Lead Seal (10) if desired



Notes

- Only the Z41 is equipped with a Tamper Circuit
- Security wire is not supplied with either kit but will provide better tamper security
- The Lead Pin (2) can be replaced by the Screw & BK Nut (4) for securing to the index (see parts list in table 8).

Table 8 : PARTS LIST

| 7505XX | Meter Complete |
|---------------|---|
| 750001 | 750 Brochure (Document) |
| 750002 | 750 Installation and Maintenance Manual (Document) |
| 750003 | 750 Approvals Documentation (Document) |
| 750004 | 750 Parts Weights and Recyclability (Document) |
| 602509 | X Dust Caps - White threaded |
| 602389 | X Dust Caps - Black no thread |
| 750010 | X Red Plastic Seal Z4/Z5 (3 Reqd) (32446710) |
| 750013 | X Red Plastic Seal NSW - EL (3 Reqd) |
| 750014 | X Red Plastic Seal 750 NZ (3 Reqd) |
| 750101 | Change Gear for gas meter (3747000) |
| 750102 | Change Gear for index (3747500) |
| 750020 | Index Front Facing Complete |
| 750021 | Index Screw ISO 7045 -M4x8 -4.8 -H Zn-galv (4 Reqd) |
| 750022 | Index Cover hydrophilic coated |
| 7502XX | X Index Plate Printed (Customer Specific) |
| 750023 | index plate source part with point AUS (32447055) |
| 750024 | Index Assembly Z4 V2 Aus (32910106) |
| 750025 | index Z4 V2 complete (32319625) part of 750024 |
| 750026 | worm gear Z=20 Z4 V2 (32447051) part of 750025 |
| 750027 | worm Z4 five starts V2 (32447052) part of 750024 |
| 750028 | index cover (window) Z4 (30214325) part of 750024 |
| 750029 | index gasket Z4/Z5 (32446539) part of 750024 |
| 750110 | Index Top Read Complete |
| 750021 | Index Screw ISO 7045 -M4x8 -4.8 -H Zn-galv (4 Reqd) |
| 750111 | Index Cover hydrophilic coated |
| 7502XX | X Index Plate Printed (Customer Specific) |
| 750112 | index plate source part with point AUS (32447297) |
| 750113 | Index Assembly Z4 V2 Aus Top Read |
| 750114 | index Z4 V2 complete (72910149) part of 750113 |
| 750026 | worm gear Z=20 Z4 V2 (32447051) part of 750114 |
| 750027 | worm Z4 five starts V2 (32447052) part of 750113 |

| | | |
|---------------|-------------------|---|
| | 750115 | index cover (window) Top Read Z4 (32319790) part of 750113 |
| | 750029 | index gasket Z4/Z5 (32446539) part of 750113 |
| 750030 | | X Meter Assembled without Index or Badge |
| | 750060 | Outlet Pipe Complete |
| | 750061 | Outlet Pipe Moulded (32319623) |
| | 750062 | Top o-ring 27x2 NBR 70 Shore A (3110001) |
| | 750063 | Bottom o-ring 34x2,5 NBR 70 Shore A (3110496) |
| 750070 | | X Meter Assembled w/o Index or Badge c/w Non-Return |
| | 750065 | Outlet Pipe Complete c/w Non-Return Valve |
| | 750064 | Non-Return Assembly |
| | 750061 | Outlet Pipe Moulded (32319623) |
| | 750062 | Top o-ring 27x2 NBR 70 Shore A (3110001) |
| | 750063 | Bottom o-ring 34x2,5 NBR 70 Shore A (3110496) |
| | 750031 | O-ring Top/Bottom 3.5x190 NBR 70 Shore A |
| | 750066 | Replaced by 750031 (was 4x190mm) |
| | 610019 | Meter CS Screws M6x16 Molybond Coated (4 Reqd) |
| | 750032 | Magnetic Coupling Complete (72910105) |
| | 750033 | Bearing Pot (32445487) part of 750032 |
| | 750034 | Sealing Washer (32446256) part of 750032 |
| | 750035 | External Magnetic Ring (32446644) part of 750032 |
| | 750036 | Internal Magnetic Ring (32446643) part of 750032 |
| | 750037 | Measuring Unit Complete with Bracket (72910104) |
| | 750038 | Measuring Unit (72319317) |
| | 750039 | Bracket (2 Reqd) (32319207) |
| | 750040 | Top Case Complete |
| | 750041 | Top Case Painted c/w Test Nipple Screw |
| | 750042 | Top Case Machined |
| | 750043 | Top Case Cast |
| | 204006 | PTN Screw M4x7 WashF Zinc BlackPas |
| | | X Replaced with 750021 |
| | 750021 | X PTN Screw ISO 7045 -M4x8 -4.8 -H Zn-galv |
| | 750050 | Bottom Case Painted |
| | 750051 | Bottom Case Cast |

X Items marked X are variables as defined in each BOM

Miscellaneous

L0331 Grease Kluber Isoflex Topas NB5051

L0332 Oil Kluber Constant OY32

A0339 Pressure Test Nipple Sealant

Accessories

BKNut M5 Nyloc Nut

15006 M5x12 Screw Molybond Coated

750080 Box for Four(4) Meters

750081 Box Divider for 750080

750087 IN-Z41 Pulse Module and Cable Complete (72905843)

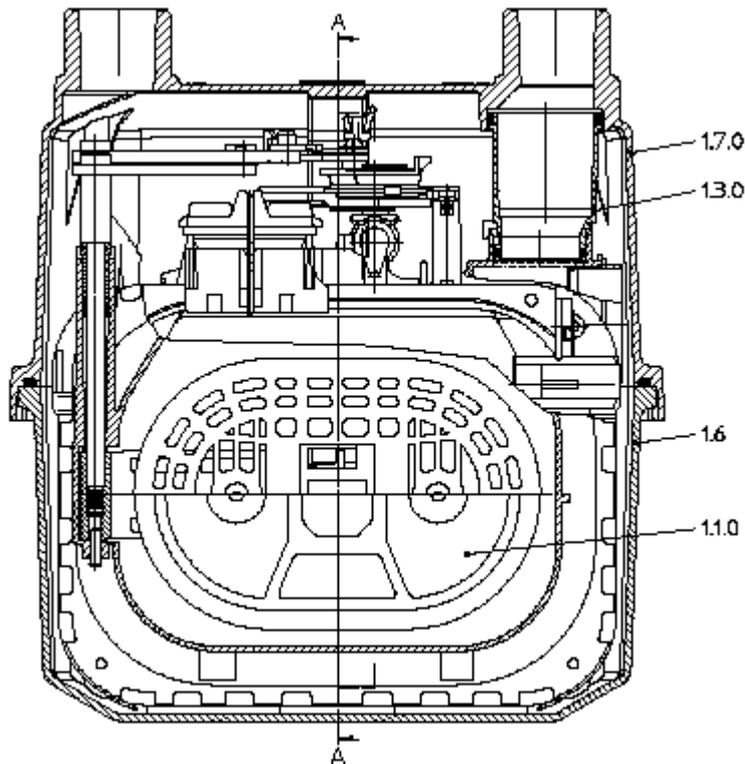
750083 IN-Z62 Pulse Module (Screw Terminals)

750084 IN-Z63 Pulse Module (Binder Plug)

750085 Jemena Pulse Kit (Plastic Bag c/w 750082 & 15006 & BKNut)

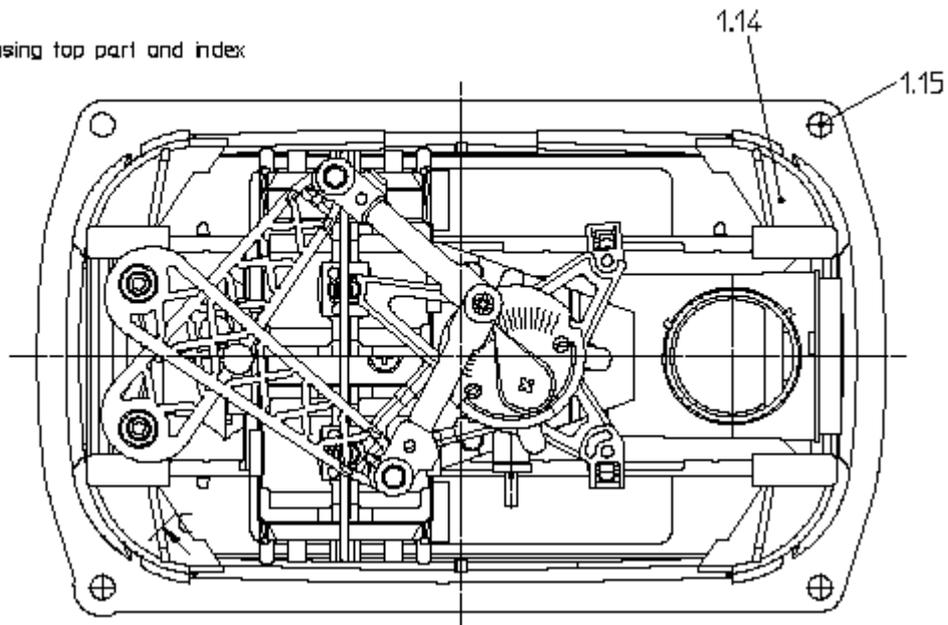
32446432 Cable and plug for Pulse Module IN-Z41

ASSEMBLY DRAWINGS

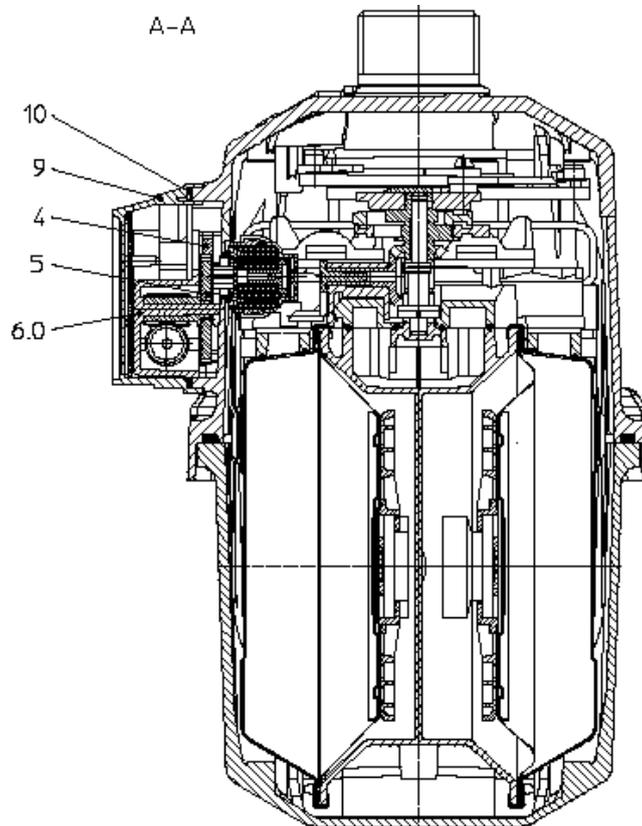


FRONT VIEW CUTAWAY

View without housing top part and index



TOP VIEW WITHOUT HOUSING AND INDEX



CUT AWAY SIDE VIEW

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