

NATURAL GAS METERS



Natural Gas Meters



FN G4



FN G6



FN G10



FN G4-CPPU

Pre-Payment Module



FNG-PPU G4-G25

CONTENTS

Natural Gas Meters	1
General Features	1
Pre-Paid Compact Natural Gas Meter	1
Technical Table	1
Pressure Loss and Error Curves	2
Technical Drawings	3
Pre-Payment Module	4
General Features	4
Technical Table	4
Technical Drawings	4

EN 1359
CE

Assembly Position : Vertical
Relative Humidity : <%93
Temperature Range: Between -25°C and +55°C

NATURAL GAS METERS

FN G4



FN G6



FN G10



General Features

Outer body is made of deep rolled plate.

Numbering machine records in positive direction even when there is reverse flow of the gas.

It has been manufactured with minimum number of parts made of inner body engineering plastic.

For more sensitive measurements in G4 meter, minimum-friction 360° rotating rotor type operating mechanism has been used.

Minimum horizontal friction suction and force mechanism is used in G6 and G10 meters.

Easy meter reading has been ensured thanks to big counter disks above standard.

It has a longer life as advanced technology and advanced engineering materials have been used.

Thanks to its excellent design, there is

a pressure loss lower than the one set out in TS 5910 EN 1359.

It is suitable for natural gas and LPG gases. Connection points are manufactured with two pipe gear outputs.

Gas input and output pipe gear axes are 110 mm in G4 meter.

Gas input and output pipe gear axes are 130 mm in G6 meter.

Gas input and output pipe gear axes are 280 mm in G10 meter.

White color (Ral 9016)

Electrostatic powder paint

Silent operation

Galvanize coated outer body with 0.8 mm thickness

Test pressure 0.75 bar

Maintenance-free

FN G4-CPPU



FN G6-CPPU



Pre-Paid Compact Natural Gas Meter:

Pre-paid natural gas meters are used by mass housings, shopping malls, industrial zones and holiday resorts utilizing central system natural gas or LPG and gas distribution organizations of cities. With these meters, price of the gas sold is collected in advance and there is no need for activities such as meter reading, billing, invoice distribution, collection and payment follow-up. In this way, operating costs are reduced.

Pre-paid compact meters consist of mechanical meter with opening-closing valve, credit loading and measuring electronic module.

Credit loading is made via high-security smartcard. Credits at desired amounts

are loaded into these smartcards at the credit loading stations and then these credits are transferred to the natural gas counters.

Pre-paid compact meters have both mechanical numbering machine and LCD display. Date-time information, consumption and remaining credit information, valve status, battery voltage and warning messages are presented to users on LCD display.

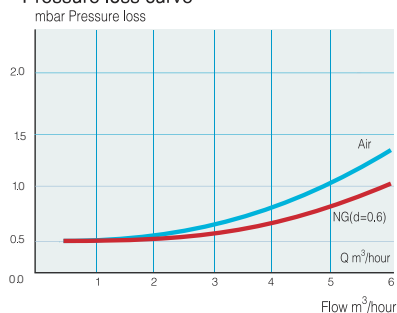
The battery feeding electronic modules of the pre-paid compact meters is the long-life lithium battery. Life of the battery can be monitored on LCD display. When the battery is over, the valve shall be closed and prevent gas flow.

Model	FN G4	FN G6	FN G10	FN G4 CPPU	FN G6 CPPU
Gas Types	Naturalgas-LPG	Naturalgas-LPG	Naturalgas-LPG	Naturalgas-LPG	Naturalgas-LPG
Q _{min}	0,04 m³/h	0,06 m³/h	0,1 m³/h	0,04 m³/h	0,06 m³/h
Q _{max}	6 m³/h	10 m³/h	16 m³/h	6 m³/h	10 m³/h
Operating pressure	0,5 bar	0,5 bar	0,5 bar	0,5 bar	0,5 bar
Measurement volume	1,2 dm³	2,2 dm³	5 dm³	1,2 dm³	2,2 dm³
Operating temperature	-25°C, + 55 °C	-25°C, + 55 °C	-25°C, + 55 °C	-25°C, + 55 °C	-25°C, + 55 °C
Body	Deep rolled plate	Deep rolled plate	Deep rolled plate	Deep rolled plate	Deep rolled plate
Weight	2 kg.	3 kg.	6,8 kg.	2,2 kg.	3,2 kg.
Accuracy Q min	± %3	± %3	± %3	± %3	± %3
Accuracy Q max	± %1,5	± %1,5	± %1,5	± %1,5	± %1,5
Maximum value displayed by meter m³	99999,999	99999,999	99999,999	99999,999	99999,999
Protection class	IP54	IP54	IP54	IP54	IP54
Pressure loss max.	2 mbar	2 mbar	2 mbar	2 mbar	2 mbar
Humidity %	<93	<93	<93	<93	<93

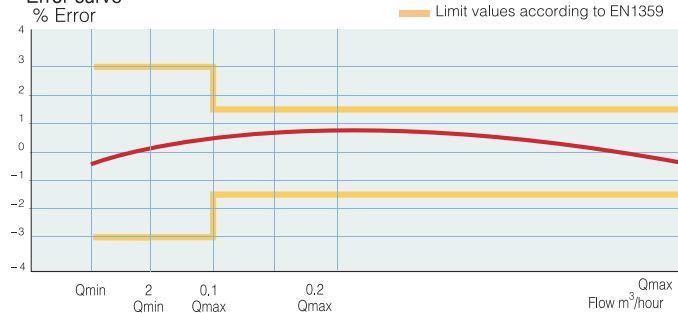
NATURAL GAS METERS

G4

Pressure loss curve

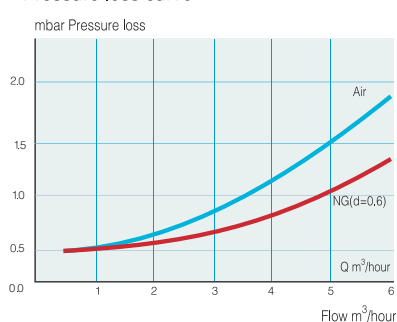


Error curve

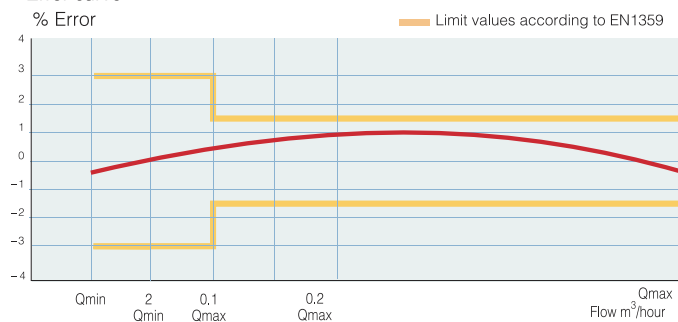


G6

Pressure loss curve

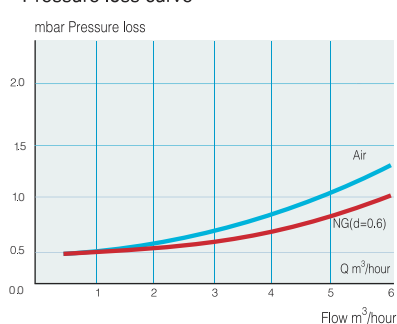


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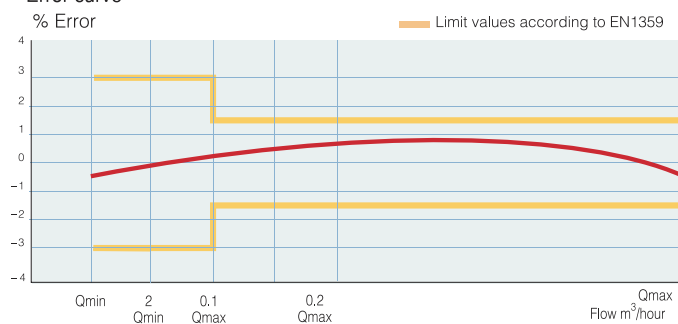


G10

Pressure loss curve

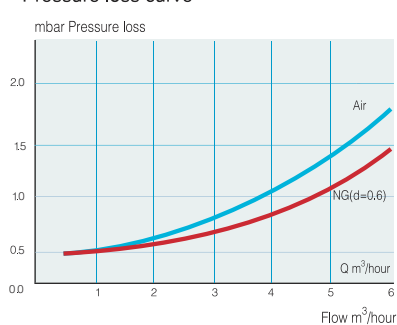


Error curve

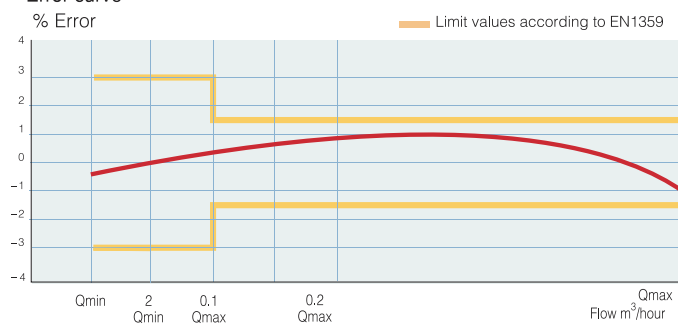


G4-CPPU

Pressure loss curve

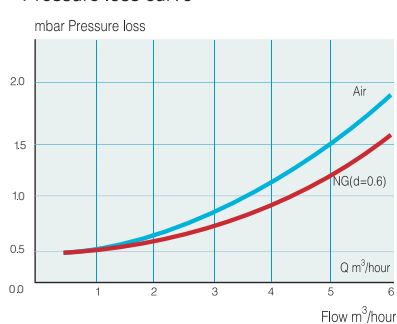


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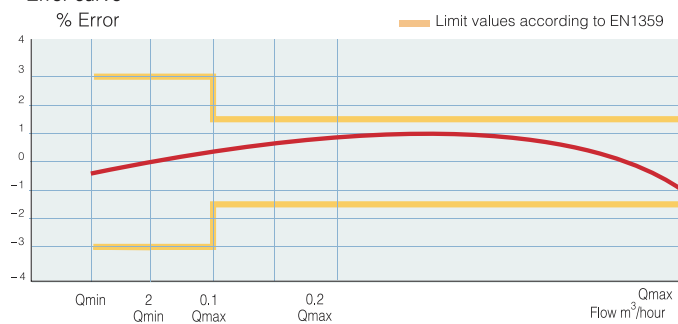


G6-CPPU

Pressure loss curve

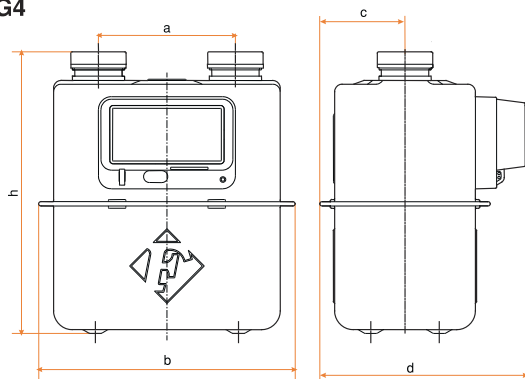


Error curve



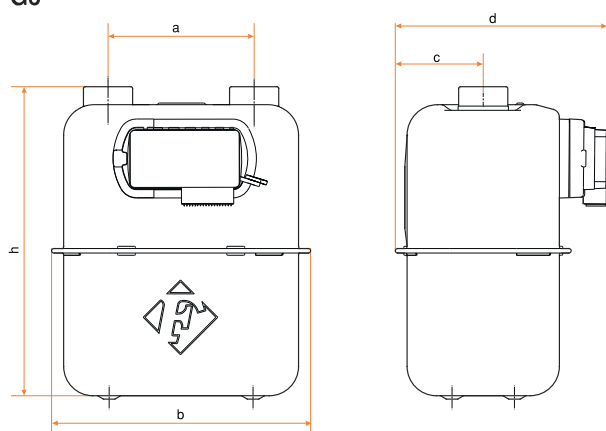
NATURAL GAS METERS

G4



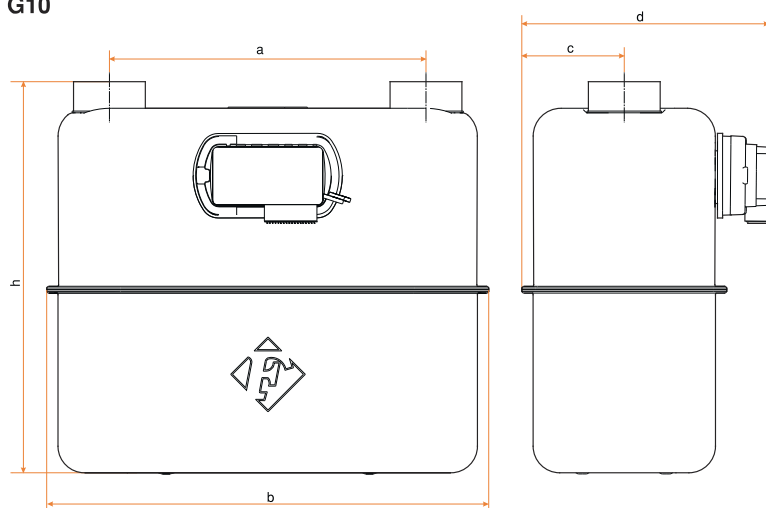
Type	Connection		Dimensions				
FN	DN	Tooth sizes	h	a	b	c	d
G4	32	G1 1/4"	226	110	206	68,5	166

G6



Type	Connection		Dimensions				
FN	DN	Tooth sizes	h	a	b	c	d
G6	32	G1 1/4"	276	130	231	78	187

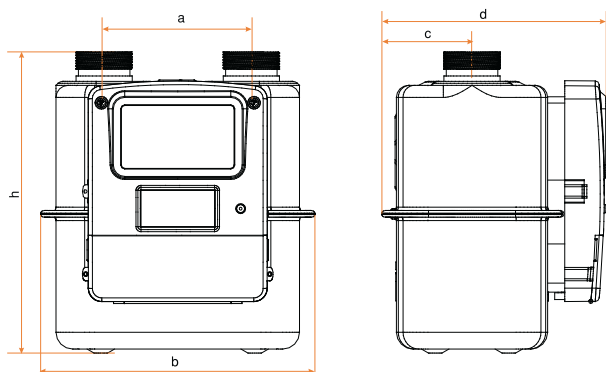
G10



Tip	Connection		Dimensions				
FN	DN	Tooth sizes	h	a	b	c	d
G10	50	G 2"	345	280	395	93	214

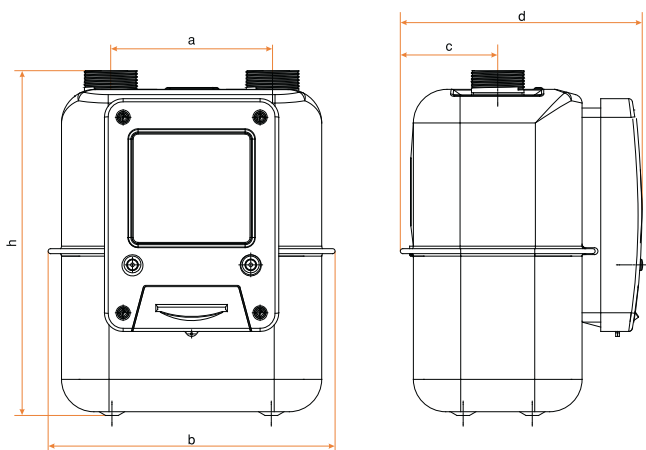
NATURAL GAS METERS

G4-CPPU



Type	Connection		Dimensions				
FN CPPU G4	DN	Tooth sizes	h	a	b	c	d
	32	G1 1/4"	226	110	206	68,5	168

G6-CPPU



Type	Connection		Dimensions				
FN CPPU G6	DN	Tooth sizes	h	a	b	c	d
	32	G1 1/4"	276	130	231	78	195

NATURAL GAS METERS



FNG PPU



Valve top union : Output end
LCD : Display showing consumption cubic meter, credit, date information
Menu button : Allows display of total consumption cubic meter, remaining credits, date information. After smartcard is inserted, credit is loaded by pressing this button.
Smartcard slot : The section to insert smartcard
Valve bottom union: Input end
Pulse cable : Cable transmitting electronic signal from mechanical meter to pre-payment module.

Pre-Payment Module

Federal pre-payment unit is a unit which carries out counting transaction with the help of pulse signal taken from counting disks of natural gas meters and stopping gas flow when loaded credit is over. Batter life of the device is at least 10 years.

Date-time variation is kept minimum thanks to real time-hour integration. The device supports various languages. (Turkish, Uzbek, English)
 It has permanent memory to keep the information.

Date, valve position, battery level, remaining credit amount, index and warning icons are shown on the LCD display. LCD is always on.

Valve position is shown by an open or closed valve icon on LCD.

Battery status is shown in 3 stages on the LCD display.

Remaining credit (balance) is shown on the LCD display as 6 digits whole numbers (m3) and 2 digits (1/100 m3) after dot.

Access to device information is allowed via the button on the device.

Any failure or warning status is shown with exclamation (!) symbol. This symbol is displayed till the service staff intervenes.

6-month consumption statistics can be kept.

All kinds of interventions are kept in the memory with details. In such cases, the

device closes the valve to prevent gas flow.

There are 2 batteries with a total power of 9500 mAh in the device. In case of low battery, the battery informs the subscriber with a warning shown on the display. When the battery is dead, the device closes the valve and does not allow gas flow.

In case of a cut-off or failure in the cable from the mechanical meter to the pre-payment module, the device valve is closed and required warnings are shown.

When the credit amount in the device goes below a particular limit, the display will flash to give low-credit warning.

The following standards have been fulfilled and the relevant tests have been carried out at advanced laboratories for user safety and device reliability.

Climate tests:

IEC60068-2-2[15] Dryheat

IEC60068-2-1[14] Cold

IEC60068-2-78[20] Dampheat, steady-state

IEC60068-2-30[16] Dampheat, cyclic (condensing)

Performance tests:

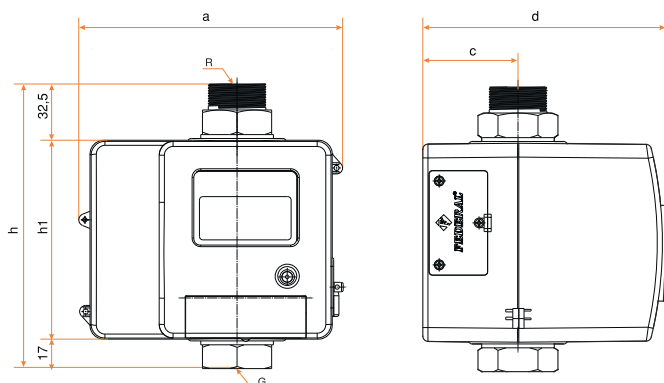
IEC61000-4-3[24] Radiated,

radiofrequency, electromagnetic fields

IEC61000-4-2[23] Electrostatic

discharge: disturbance test.

Type	: FNG PPU G4-G25		
Operating pressure	: $P_{max} = 0,5 \text{ Bar}$		
Sensitivity	: 0.01 m^3		
Measurement type	: Pulse		
Display	: Special design LCD		
Relative humidity	: $< \%93$		
Ambient temperature	: $-20^{\circ}\text{C} \dots +55^{\circ}\text{C}$		
Storage temperature	: $-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$		
Material	: ABS, UV-V0		
Data protection	: EEPROM, Spare battery		
Card type	: Password-protected 7816 1-2-3 compatible smartcard		
Measurement range	: $Q_{min} : 0,040 \text{ m}^3 / \text{hour} - Q_{max} : 40 \text{ m}^3 / \text{hour}$		
Battery	: 2 pieces of total 9500 mAh lithium $>10 \text{ Years}$		
Protection class	: IP54		
Weight	: G4-G6	: G10-G16	: G25
	1,8 kg	2,1 kg	2,2 kg



Type	Connection		Dimensions					
FNG PPU G4-G6	DN	Tooth sizes	h	h1	a	b	c	d
	25	G1 - R1	164.5	115	140	85	55	140
FNG PPU G10-G16	DN	Tooth sizes	h	h1	a	b	c	d
	40	G1 1/2 - R1 1/2	164.5	115	140	85	55	140
FNG PPU G25	DN	Tooth sizes	h	h1	a	b	c	d
	50	G2 - R2	164.5	115	140	85	55	140