




**JP KENNY**



**CITY GAS DISTRIBUTION PROJECT  
FOR PROCUREMENT OF DOMESTIC AND COMMERCIAL METER  
& REGULATOR  
CORRIGENDUM – 1**



**Annexure - 1**

	<b>CITY GAS DISTRIBUTION PROJECT</b>								
<b>TECHNICAL DATA SHEET FOR DOMESTIC METER - G1.6</b>									
<b>General</b>	Service	Natural Gas							
	Standard	Approved to EEC and OIML Standard. Note:1							
	Connection Orientation	Left side inlet and Right side outlet type -I quantity as per MR / SOR of tender	Right side inlet and Left side outlet type -II quantity as per MR / SOR of tender						
<b>Process Condition</b>	Installation	Suitable for Out Door/In-door Installations, tamper proof and corrosion resistance for a life period of 20 years.							
	Q max.	2.5 m <sup>3</sup> /hr							
	Q min.	0.016 m <sup>3</sup> /hr							
	Accuracy Class	± 3Qmin. to 0.1 Qmax. , ±1.5% (0.1 Qmax. to Qmax.) as per EN1359.							
	Range Ability	1:150 or better							
	Operating Pressure	21 - 24 mbar (g)							
	Pressure loss	Less than 2 mbar (g)							
	Design Pressure	500 mbar (g)							
	Specific Gravity	0.6							
<b>Body</b>	Operating Temperature	0 degree C to 60 degree C							
	Case work / body	Casing and Body of steel conforming to ASTM A216 WCB and water proof.							
	Corrosion Protection	All part of the meter shall be corrosion resistant & suitable coating on inside and out side casing.							
	End Connections	3/4" NPT inlet and outlet conforming to ANSI B1.20.1 (in case the end connections are differing, bidder to provide suitable adopter of approved quality to meet the specified end connections).							
<b>Index</b>	Fire Resistance	As per BS EN 1359:1999/ BS 4161 or Equivalent.							
	Max Index Reading	0 0000.000							
	Unit	CM(Cubic Meter)							
	Marking on Index details	GAIL GAS LIMITED							
<b>Internals</b>	Ingress Protection	IP 65 and above							
	Diaphragm	Polyester fabric coated with rubber on either side of equipment for an endurance life cycle of 2000 hrs. as per EN 1359.							
	Other Internals	All meter internals shall be non-metallic to immune from tampering like with magnet.							
<b>Others</b>	Leak testing	Meter pressurized with air at 1.5 MAOP of the meter, immersed in water for observance of leakage.							
	Automatic Meter Reading System.	The gas meter should be compatible for implanting the automatic meter reading system at a later stage by retrofitting an appropriate signal transmitting device, shall be retrofittable pulse transmitter. <b>Bidder shall have to submit details of AMR facility along with the bid and also, give a demonstration of meter to GGL/WGI.</b>							
	Noise	Very low, Vendor to specify.							
	Anti-temper feature	Mechanism to prevent reverse registration.							
	Air Proof ability	No leakage							
	Cyclic Volume	Vendor to furnish							
	Test Period : Leak Testing	Vendor to furnish							
Permissible error	Vendor to furnish								
<b>NOTE:</b>									
1	The meter shall be approved and manufactured in accordance with the requirement of BS EN 1359:1999 or equivalent and as per the requirement of this data sheet.								
2	The Vendor shall provide calibration certificate and accuracy at MAOP of the meter for flow rates of Qmax , Qmin , 0.2 Qmax. It model approval should be from FCRI or DVGW or equivalent authorities.								
3	<p>The Vendor shall submit, along with the offer, the manufacturing standards, model number, performance curve, approvals of the statutory bodies and technical details of the model offered. The offered meters shall be from approved vendor list of WGI/GGL.</p> <p>a) Dimensional outlet with mounting details with model number, Part list and technical literatures.</p> <p>b) Connection by purchaser.</p> <p>c) Installation, Operation and Maintenance Instruction manual.</p> <p>d) Testing and Inspection Procedure</p> <p>e) Test, Calibration and certificate from statutory bodies.</p> <p>f) Test certificate covering each meter supplied conforming the accuracy of registration in accordance with the requirement of BS EN 1359:99 or equivalent.</p>								
4	End connections shall be provided by plastic caps.								
5	The meters shall be indelibly marked with details of maximum flow, direction of flow ,maximum operating pressure, name of manufacturer, model serial number, date of manufacturing etc along with name of client: GAIL GAS LIMITED.								
6	Center to center distance between inlet & outlet connection should be 110 mm.								
7	Flow capacity in SCM/H shall be calculated considering maximum outlet pressure & operating Temperature.								
	<b>DATA SHEET FOR DOMESTIC METER ( G1.6)</b>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Document No.</td> <td style="text-align: center;">Rev.</td> </tr> <tr> <td style="text-align: center;">11-0290-02-11-02-003</td> <td style="text-align: center;">2</td> </tr> <tr> <td colspan="2" style="text-align: center;">SHEET 1 of 1</td> </tr> </table>	Document No.	Rev.	11-0290-02-11-02-003	2	SHEET 1 of 1	
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**CITY GAS DISTRIBUTION PROJECT**



**TECHNICAL DATA SHEET FOR DOMESTIC REGULATORS**

<b>General</b>	Service	Natural Gas
	Quantity	As per MR / SOR of Tendor
	Design	Direct acting spring control pressure regulator with in-built pressure reducing valve type balance regulating unit to ensure a constant outlet pressure having insufficient downstream pressure slam shut device & relief valve.
	Connection Orientation	Inline Inlet and Outlet Connection
	Installation	Suitable for Out Door Installations, tamper proof and corrosion resistance for a life period of 20 years
<b>Flow</b>	Flow capacity .	2.5 SCMH
<b>Pressure &amp; Temperature</b>	Inlet Pressure	1-4 bar (g)
	Operating Pressure	21-24 mbar(g)
	Outlet pressure set point	21 mbar(g) (Factory Set Point) (Spring Range 18-30 mbar. Bidder shall necessarily submit the performance curve)
	Over Pressure cut of point	38 mbar(g)
	Under Pressure Cut of Point	11 mbar(g)
	Creep Relief Value	27 mbar(g) ( the position of the atmospheric venting shall not be towards vertically top to avoid entry of foreign material in to the regulator )
	Operating Temperature	0° C to 40 ° C , Tested at 60 ° C
<b>Body</b>	Casing	Casing and body of Die Cast Aluminium and water-weather proof IP 65/ corrosion resistant for outdoor installation.
	End Connections	1/2" NPT (Female loose nut with suitable washers) inlet and 3/4" NPT (Female Loose nut with suitable washers) outlet conforming to ANSI B1.20.1 (incase the end connections are differing, bidder to provide suitable adopters of approved quality to meet the
	Fire Resistance	As applicable
<b>Internals</b>	Diaphragm	Synthetic Rubber (Reinforced )
	Internals	Internals parts shall be Stainless steel, Brass seal of Nitrile rubber or aluminium
<b>Others</b>	Filter / Strainer	Essential (Inbuilt)
	Accuracy Class	AC 5 / RG 5 ( Vendor to Specify)
	Closing Pressure	SG 10 ( Vendor to Specify).
	Failure Pressure	Closed
	Type of Reset	Manual (Vendor to confirm)

**NOTE:**

1	The regulator shall be indelibly marked with details of maximum Flow, inlet and outlet Pressure range, direction of flow, name of the manufacturer, model, unique serial number, date of manufacturing etc.
2	The Vendor shall submit, along with the offer, the manufacturing standards, model number, performance curve, approvals of the statutory bodies and technical details of the model offered. The offered regulators shall be from approved vendor list of WGI/GGL a) Dimensional outlet with mounting details with model number, Part list and technical literatures. b) connection by purchaser (piping, electrical etc.) c) Installation, Operation and Maintenance Instruction manual. d) Testing and Inspection Procedure e) Test certificate from statutory bodies Inspection Certificate.
3	End connections shall be protected by plastic caps.



**DATA SHEET FOR DOMESTIC REGULATOR**

**Document No.**

**Rev.**

**11-0290-02-11-02-004**

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**SHEET 1 of 1**

**TECHNICAL DATA SHEET FOR PRESSURE REGULATOR -TYPE 1**

<b>General</b>	Service	Natural Gas
	Quantity	As per MR / SOR of Tendor
	Design	Direct acting spring control pressure regulator with in-built pressure reducing valve type balance regulating unit to ensure a constant outlet pressure having excess pressure slam shut device, insufficient downstream pressure slam shut device & relief valve.
	Connection Orientation	Inline Inlet and Outlet Connection
	Installation	Suitable for Out Door Installations, tamper proof and corrosion resistance for a life period of 20 years
	Installation Position	Horizontal / Vertical
<b>Flow</b>	Flow capacity .	10.0 M3/Hr.
<b>Pressure &amp; Temperature</b>	Inlet Pressure	1.0 bar(g) to 4 bar(g)
	Design Pressure	5 bar(g)
	Outlet Pressure	80-110 mbar(g)
	Outlet pressure set point	110 mbar(g) (Factory Set Point)
	Over Pressure cut of point	(+)10% of Set Point
	Under Pressure Cut of Point	(-) 10% of Set Point
	Creep Relief Value	Vendor to specify
	Operating Temperature	0° C to 40 ° C , Testing Temperature-60 ° C
<b>Body</b>	Casing	Casing and Body of Die Cast Aluminium and water-weather proof IP 65 / corrosion resistant for outdoor installation..
	End Connections	1" NPT(Female loose nut with suitable washers) inlet and 1.5" NPT (Female loose nut with suitable washers) outlet conforming to ANSI B1.20.1( In case of end connections are differing bidder to provide suitable adaptors of same material of regulator & of approved quality to meet the specified end connections)
	Fire Resistance	As Applicable
<b>Internals</b>	Diaphragm	Synthetic Rubber (Reinforced )
	Internals	Internals parts shall be Stainless steel, Brass seal of Nitrile rubber or aluminium
<b>Others</b>	Filter	Essential (Inbuilt)
	Accuracy Class	AC 5 / RG 5.(Vendor to Specify)
	Closing Pressure	SG 10.(Vendor to Specify)
	Failure Pressure	Closed
	Type of Reset	Manual (Vendor to Specify )
	Line Size	inlet 1" and outlet 1.5" (For different size regulator , adopter shall be in vender scope of supply)
<b>NOTE:</b>		
1	The regulator shall be indelibly marked with details of maximum Flow, inlet and outlet Pressure range,direction of flow, name of the manufacturer, model, unique serial number, date of manufacturing etc.	
2	The Vendor shall submit, along with the offer, the manufacturing standards, model number, performance curve, approvals of the statutory bodies and technical details of the model offered. The offered regulators shall be from approved vendor list of WGI/GGL	
	a) Dimensional outlet with mounting details with model number, Part list and technical literatures.	
	b) Connection by purchaser.	
	c) Installation, Operation and Maintenance Instruction manual.	
	d) Testing and Inspection Procedure	
e) Test, Calibration and certificate from statutory bodies Certificate.		
3	End connections shall be protected by plastic caps.	
4	Regulator shall be sized considering minimum inlet pr. and maximum outlet pressure of set range.	
5	SS tubing of appropriate size for impulse connection of regulator and slam shut valve to be supplied with suitable connectors wherever applicable.	

**TECHNICAL DATA SHEET FOR PRESSURE REGULATORS -TYPE 2**

<b>General</b>	Service	Natural Gas
	Quantity	As per MR / SOR of Tendor
	Design	Direct acting spring control pressure regulator with in-built pressure reducing valve type balance regulating unit to ensure a constant outlet pressure having excess pressure slam shut device, insufficient downstream pressure slam shut device & relief valve.
	Connection Orientation	Inline Inlet and Outlet Connection
	Installation	Suitable for Out Door Installations, tamper proof and corrosion resistance for a life period of 20 years
	Installation Position	Horizontal / Vertical
<b>Flow</b>	Flow capacity .	25.0 M3/Hr.
<b>Pressure &amp; Temperature</b>	Inlet Pressure	1.0 bar(g) to 4 bar(g)
	Design Pressure	5 bar(g)
	Outlet Pressure	80-110 mbar(g)
	Outlet pressure set point	110 mbar(g) (Factory Set Point)
	Over Pressure cut of point	(+)10% of Set Point
	Under Pressure Cut of Point	(-) 10% of Set Point
	Creep Relief Value	Vendor to specify
	Operating Temperature	0° C to 40 ° C , Testing Temperature-60 ° C
<b>Body</b>	Casing	Casing and Body of Die Cast Aluminium and water-weather proof IP 65 / corrosion resistant for outdoor installation..
	End Connections	1" NPT(Female loose nut with suitable washers) inlet and 1.5" NPT (Female loose nut with suitable washers) outlet confirming to ANSI B1.20.1( Incase of end connections are differing bidder to provide suitable adaptores of same material of regulator & of approved quality to meet the specified end connections)
<b>Internals</b>	Diaphragm	Synthetic Rubber (Reinforced )
	Internals	Internals parts shall be Stainless steel, Brass seal of Nitrile rubber or aluminium
<b>Others</b>	Filter	Essential (Inbuilt)
	Accuracy Class	AC 5 / RG 5.(Vendor to Specify)
	Closing Pressure	SG 10.(Vendor to Specify)
	Failure Pressure	Closed
	Type of Reset	Manual (Vendor to Specify )
	Line Size	inlet 1" and outlet 1.5" (For different size regulator , adopter shall be in vender scope of supply)
<b>NOTE:</b>		
1	The regulator shall be indelibly marked with details of maximum Flow, inlet and outlet Pressure range,direction of flow, name of the manufacturer, model, unique serial number, date of manufacturing etc.	
2	The Vendor shall submit, along with the offer, the manufacturing standards, model number, performance curve, approvals of the statutory bodies and technical details of the model offered. The offered regulators shall be from approved vendor list of WGI/GGL	
	a) Dimensional outlet with mounting details with model number, Part list and technical literatures.	
	b) Connection by purchaser.	
	c) Installation, Operation and Maintenance Instruction manual.	
	d) Testing and Inspection Procedure	
	e) Test, Calibration and certificate from statutory bodies Certificate.	
3	End connections shall be protected by plastic caps.	
4	Regulator shall be sized considering minimum inlet pr. and maximum outlet pressure of set range.	
5	SS tubing of appropriate size for impulse connection of regulator and slam shut valve to be supplied with suitable connectors wherever applicable.	

**TECHNICAL DATA SHEET FOR PRESSURE REGULATOR -TYPE 3**

<b>General</b>	Service	Natural Gas
	Quantity	As per MR / SOR of Tendor
	Design	Direct acting spring control pressure regulator with in-built pressure reducing valve type balance regulating unit to ensure a constant outlet pressure having excess pressure slam shut device, insufficient downstream pressure slam shut device & relief valve.
	Connection Orientation	Inline Inlet and Outlet Connection
	Installation	Suitable for Out Door Installations, tamper proof and corrosion resistance for a life period of 20 years
	Installation Position	Horizontal / Vertical
<b>Flow</b>	Flow capacity .	40.0 M3/Hr.
<b>Pressure &amp; Temperature</b>	Inlet Pressure	1.0 bar(g) to 4 bar(g)
	Design Pressure	5 bar(g)
	Outlet Pressure	80-110 mbar(g)
	Outlet pressure set point	110 mbar(g) (Factory Set Point)
	Over Pressure cut of point	(+)10% of Set Point
	Under Pressure Cut of Point	(-) 10% of Set Point
	Creep Relief Value	Vendor to specify
	Operating Temperature	0° C to 40 ° C , Testing Temperature-60 ° C
<b>Body</b>	Casing	Casing and Body of Die Cast Aluminium and water-weather proof IP 65 / corrosion resistant for outdoor installation..
	End Connections	1" NPT(Female loose nut with suitable washers) inlet and 1.5" NPT (Female loose nut with suitable washers) outlet conforming to ANSI B1.20.1( In case of end connections are differing bidder to provide suitable adaptores of same material of regulator & of approved quality to meet the specified end connections)
	Fire Resistance	As Applicable.
<b>Internals</b>	Diaphragm	Synthetic Rubber (Reinforced )
	Internals	Internals parts shall be Stainless steel, Brass seal of Nitrile rubber or aluminium
<b>Others</b>	Filter	Essential (Inbuilt)
	Accuracy Class	AC 5 / RG 5.(Vendor to Specify)
	Closing Pressure	SG 10.(Vendor to Specify)
	Failure Pressure	Closed
	Type of Reset	Manual (Vendor to Specify )
	Line Size	inlet 1" and outlet 1.5" (For different size regulator , adopter shall be in vender scope of supply)
<b>NOTE:</b>		
1	The regulator shall be indelibly marked with details of maximum Flow, inlet and outlet Pressure range,direction of flow, name of the manufacturer, model, unique serial number, date of manufacturing etc.	
2	The Vendor shall submit, along with the offer, the manufacturing standards, model number, performance curve, approvals of the statutory bodies and technical details of the model offered. The offered regulators shall be from approved vendor list of WGI/GGL	
	a) Dimensional outlet with mounting details with model number, Part list and technical literatures.	
	b) Connection by purchaser.	
	c) Installation, Operation and Maintenance Instruction manual.	
	d) Testing and Inspection Procedure	
	e) Test, Calibration and certificate from statutory bodies Certificate.	
3	End connections shall be protected by plastic caps	
4	Regulator shall be sized considering minimum inlet pr. and maximum outlet pressure of set range.	
5	SS tubing of appropriate size for impulse connection of regulator and slam shut valve to be supplied with suitable connectors wherever applicable.	