

**RIKEN**

For on-site quick, accurate and simple measurement

**PORTABLE GAS CALORIMETER****MODEL FI-21 MJ**

Real time display (optional)

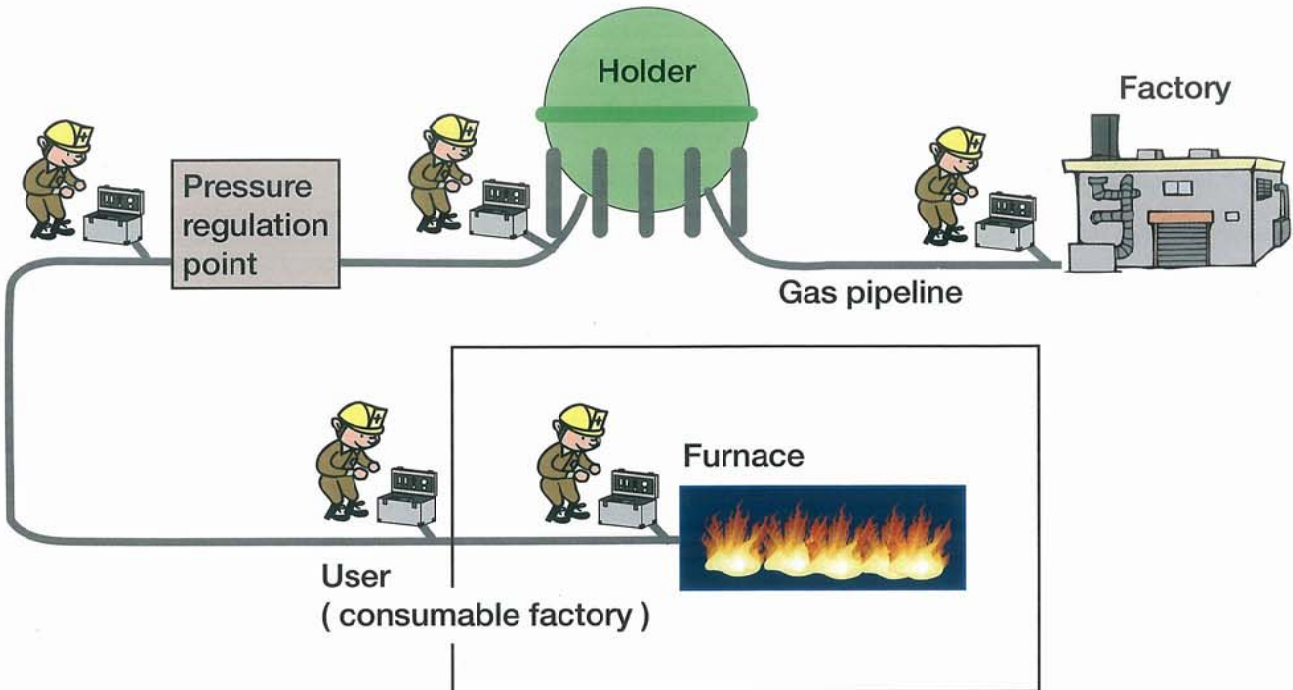
**FEATURES**

- Compact and lightweight
- Only five minutes warming up is enough
- High speed response ( 15 sec to get 90% response )
- High accuracy (  $\pm 0.1 \text{ MJ/Nm}^3$  )
- Simple operation and easy-to-read digital display
- Dry battery ( "C" size battery  $\times 4$  ) or AC 100V as two way power method
- Approx 20 hours continuous operation available by dry batteries
- Real time display available by data recorder software ( optional )

# Portable gas calorimeter

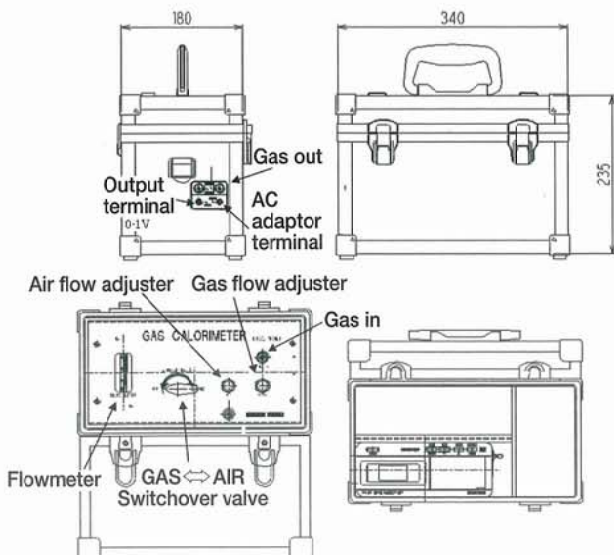
## Applications

- Calorie check use at each point of city gas line

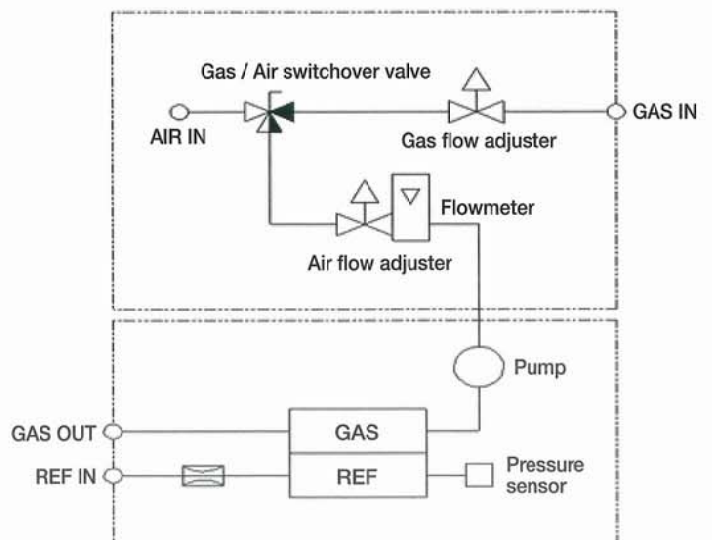


- Substitution check use at gas pipeline ( after expansion, and repair )

## External view

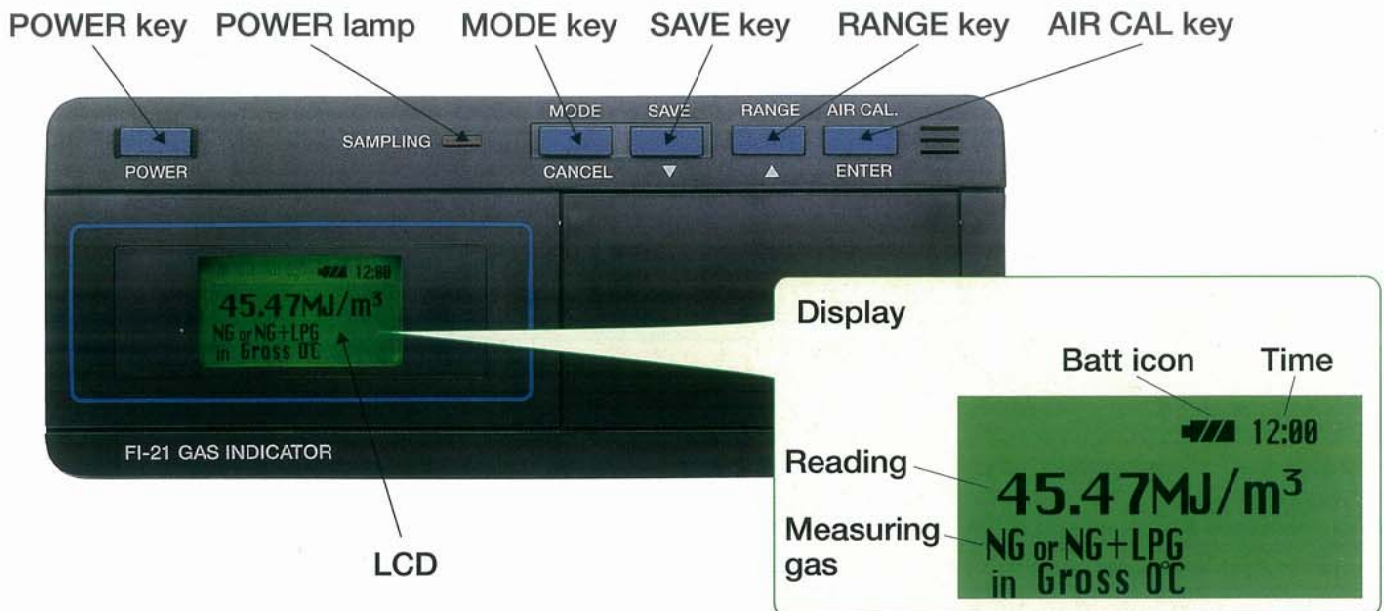


## Piping system



## Display view

- The extremely reliable interferometric method gives an accuracy of  $\pm 0.1 \text{ MJ/Nm}^3$



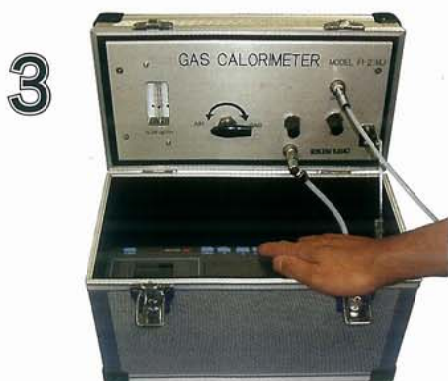
## Operation procedure



Connect sampling hose to the instrument. (max + 15kPa)



Adjust the flow rate of AIR and GAS independently to the present values, using the flow adjuster.



Change the switchover valve to AIR and make AIR CAL.



Change the valve to GAS side and when the reading gets stable, read out the value.

# Portable gas calorimeter **MODEL FI-21 MJ**

## SPECIFICATIONS (At normal operation and condition)

Model	FI-21 MJ
Detection principle	Interferometric method
Measuring gas	NG or NG + LPG *Note)
Measuring range	25-55 MJ/Nm <sup>3</sup> (minimum digit : 0.01MJ/Nm <sup>3</sup> )
0-1V external output	40-50 MJ/Nm <sup>3</sup>
Accuracy	±0.1 MJ/Nm <sup>3</sup> (At constant temp, pressure and flow rate)
Repeatability	±0.03 MJ/Nm <sup>3</sup> (At constant temp)
Response time	Better than 15 sec from responding to get 90% response
Drifting	0.22 MJ/Nm <sup>3</sup> at 10°C
Sample flowrate	Approx 0.2 L/min
Sample pressure	Atmospheric pressure to +15 kPa
Ambient temp	-10 to +40°C, better than 95%RH (non-condensing)
Power source	"C"size alkaline battery × 4, or by AC adaptor
Battery life	Approx 20 hours (by continuous power on)
PC external output	Recorder output (RS-232C) by use of exclusive cable (optional)
Dimensions & weight	340(W) × 235(H) × 180(D) mm, approx 5.5kg

Specifications subject to change without notice.

\*Note) This measures gas from hydrogen of paraffin series and other gas than it may cause error.

### ※ Error per 1 vol%

Gas	Error
O <sub>2</sub>	+0.237 MJ
N <sub>2</sub>	+0.262 MJ
CO	+0.172 MJ
CO <sub>2</sub>	+0.405 MJ
C <sub>2</sub> H <sub>4</sub>	+0.0263 MJ
C <sub>3</sub> H <sub>6</sub>	+0.0601 MJ

### Data recorder software (Optional)



- Real time graph is displayed on PC



## RIKEN KEIKI CO.,LTD.

2-7-6 Azusawa, Itabashi-ku, Tokyo 174-8744, Japan

Phone : TOKYO (03)3966-1113

Telefax : TOKYO (03)3558-9110 (GIII)

E-mail : intdept@rikenkeiki.co.jp

Web site : <http://www.rikenkeiki.co.jp>

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