

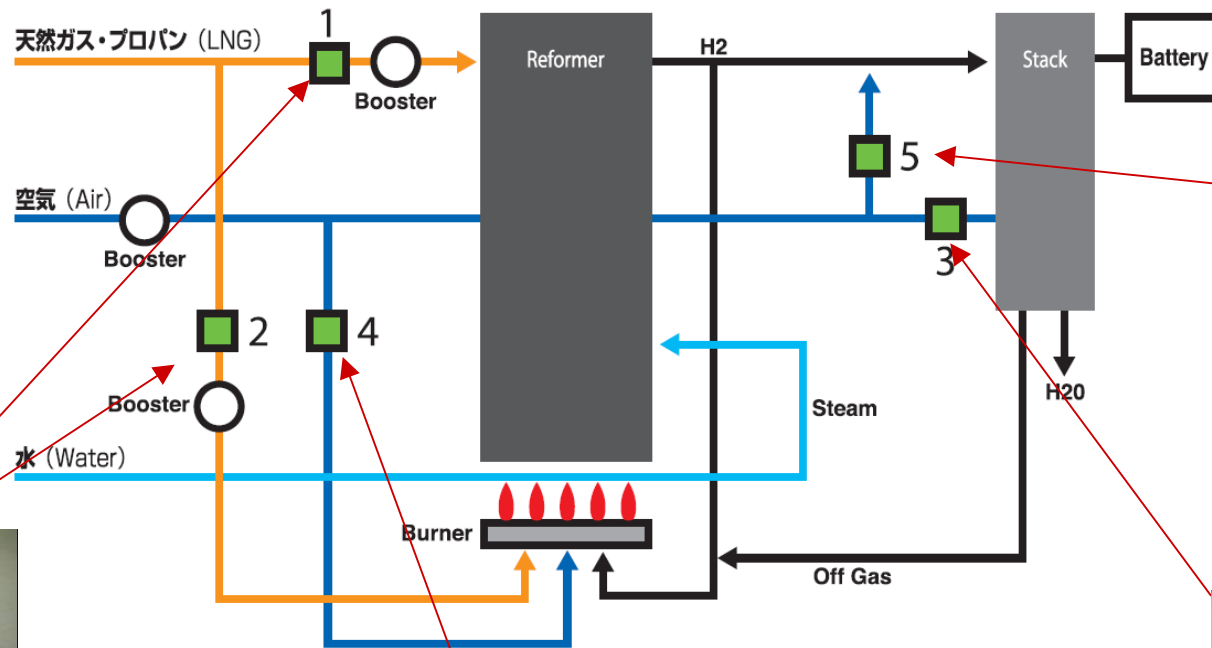
Yamatake' capability of Flow Meters for Residential Fuel Cells

*11th March 2010
Yamatake Corporation
Advanced Automation Company
Marketing Department*

Gas & Air flow inside PEFC



“MRG series”, specially designed Massflow Meters for 1~2kw Fuel cell, will be launched on April 2010



*Fuel Gases
LNG-5LM
LPG-2LM
Methane-10LM*



*Air for Burner
Air-30LM*



*Air for Selective Oxidization
Air-2LM*



*Air for Cathode
Air-70LM, 100LM*

- 1: 改質用天然ガス流量
- 2: バーナ用天然ガス流量
- 3: セル用空気流量
- 4: バーナ用空気流量
- 5: 選択酸化用空気流量

MRG series for Fuel gases
Will be launched on April 2010

azbil

for Fuel gases

MRG0005GAQN : 0 to 5L/min for Natural gas

MRG0002GAQP : 0 to 2L/min for Propane 100%

MRG0010GAQM: 0 to 10L/min for Methane 100%



Specifications

1) Gas contacted material : Aluminum die casting

2) Accuracy : +/- 3.5%FS

including temperature and pressure characteristics

3) Operating temperature range : -10 to +60C

4) Operating pressure range : 0 to 50kpa

5) Rated power supply : 5Vdc

6) Output signal : 1 to 5Vdc

7) Piping connection : Quick fastener P10

8) Long term durability : 100,000hr already evaluated

through accelerated test

MRG series for Cathode Air

Will be launched on April 2010

azbil

for Air

MRG0070CAQN : 0 to 70L/min for Air

MRG0100CAQN : 0 to 100L/min for Air



Specifications

1) Gas contacted material : PPS resin

2) Accuracy : MRG0070CPQN +/- 3.5%FS at 10 to 70L/min

MRG0100CPQN +/- 3.5%FS at 10 to 80L/min

+/- 5.0%FS at 81 to 100L/min

including temperature and pressure characteristics

3) Operating temperature range : -10 to +60C

4) Operating pressure range : 0 to 50kpa

5) Rated power supply : 5Vdc

6) Output signal : 1 to 5Vdc

7) Piping connection : Quick fastener P14

8) Long term durability : 100,000hr already evaluated

through accelerated test

MRG series for Burner combustion Air

Will be launched on April 2010

azbil

for Air

MRG0030CAQN : 0 to 30L/min for Air



Specifications

- 1) Gas contacted material : PPS resin*
- 2) Accuracy : MRG0030CPQN +/- 3.5%FS at 3 to 30L/min
including temperature and pressure characteristics*
- 3) Operating temperature range : -10 to +60C*
- 4) Operating pressure range : 0 to 50kpa*
- 5) Rated power supply : 5Vdc*
- 6) Output signal : 1 to 5Vdc*
- 7) Piping connection : Quick fastener P14*
- 8) Long range durability : 100,000hr already evaluated
through accelerated test*

MRG series for Selective Oxidization

Will be launched on April 2010

azbil

for Air

MRG0002PAQN : 0 to 2L/min for Air

Specifications

1) Gas contacted material : PPS resin

2) Accuracy : +/- 3.5%FS

including temperature and pressure characteristics

3) Operating temperature range : -10 to +60C

4) Operating pressure range : 0 to 50kpa

5) Rated power supply : 5Vdc

6) Output signal : 1 to 5Vdc

7) Piping connection : Quick fastener P10

8) Long range durability : 100,000hr already evaluated

through accelerated test

**** PROX : selective oxidization to reduce “Carbon monoxide” from Hydrogen**

