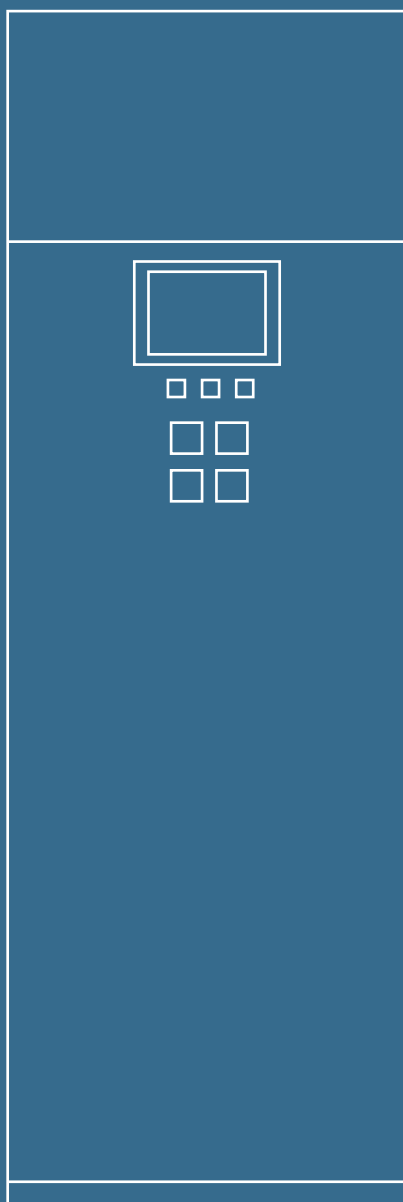


# Puremate-1400 Series

## Purifiers for high-purity gas





## Puremate-1400 series

| Purification method                                      | Gases (throughput in Nm <sup>3</sup> hr indicated in parentheses) |                   |                   |                              |                               |                               |
|----------------------------------------------------------|-------------------------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------------|-------------------------------|
| Normal temperature adsorption<br>(Catalyst + adsorption) | N <sub>2</sub><br>(6 to 2,000)                                    | Ar<br>(6 to 100)  | He<br>(6 to 100)  | O <sub>2</sub><br>(3 to 100) | H <sub>2</sub><br>(6 to 100)  | NH <sub>3</sub><br>(6 to 300) |
| Getter                                                   |                                                                   | Ar<br>(0.3 to 30) | He<br>(0.3 to 30) |                              |                               |                               |
| Cryogenic purification                                   |                                                                   |                   |                   |                              | H <sub>2</sub><br>(10 to 500) |                               |

## Puremate-1100 series

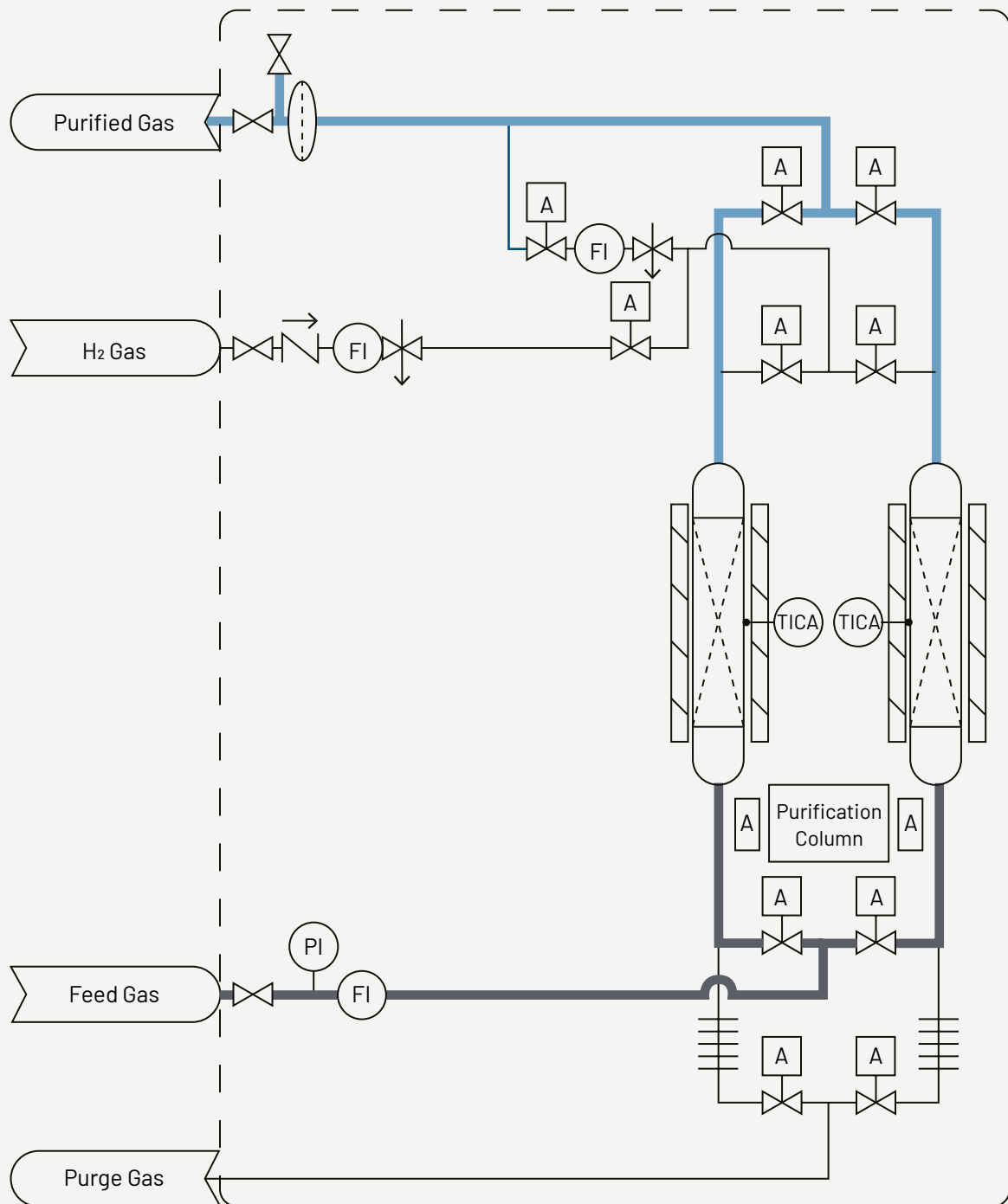
| Purification method                                      | Gases (throughput in Nm <sup>3</sup> hr indicated in parentheses) |             |             |                         |                         |
|----------------------------------------------------------|-------------------------------------------------------------------|-------------|-------------|-------------------------|-------------------------|
| Normal temperature adsorption<br>(Catalyst + adsorption) | N <sub>2</sub><br>(3,6)                                           | Ar<br>(3,6) | He<br>(3,6) | O <sub>2</sub><br>(2,3) | H <sub>2</sub><br>(3,6) |

Puremate 1100 is an entry level model for customers wishing to use small flow rates of high purity gas.

# Inert gas purifiers

## SPNP, SPAP, SPRP series

- N<sub>2</sub>: SPNP / Ar: SPAP / He: SPRP
- Removes O<sub>2</sub>, CO, and H<sub>2</sub> by catalysis and CO<sub>2</sub> and H<sub>2</sub>O by adsorption.



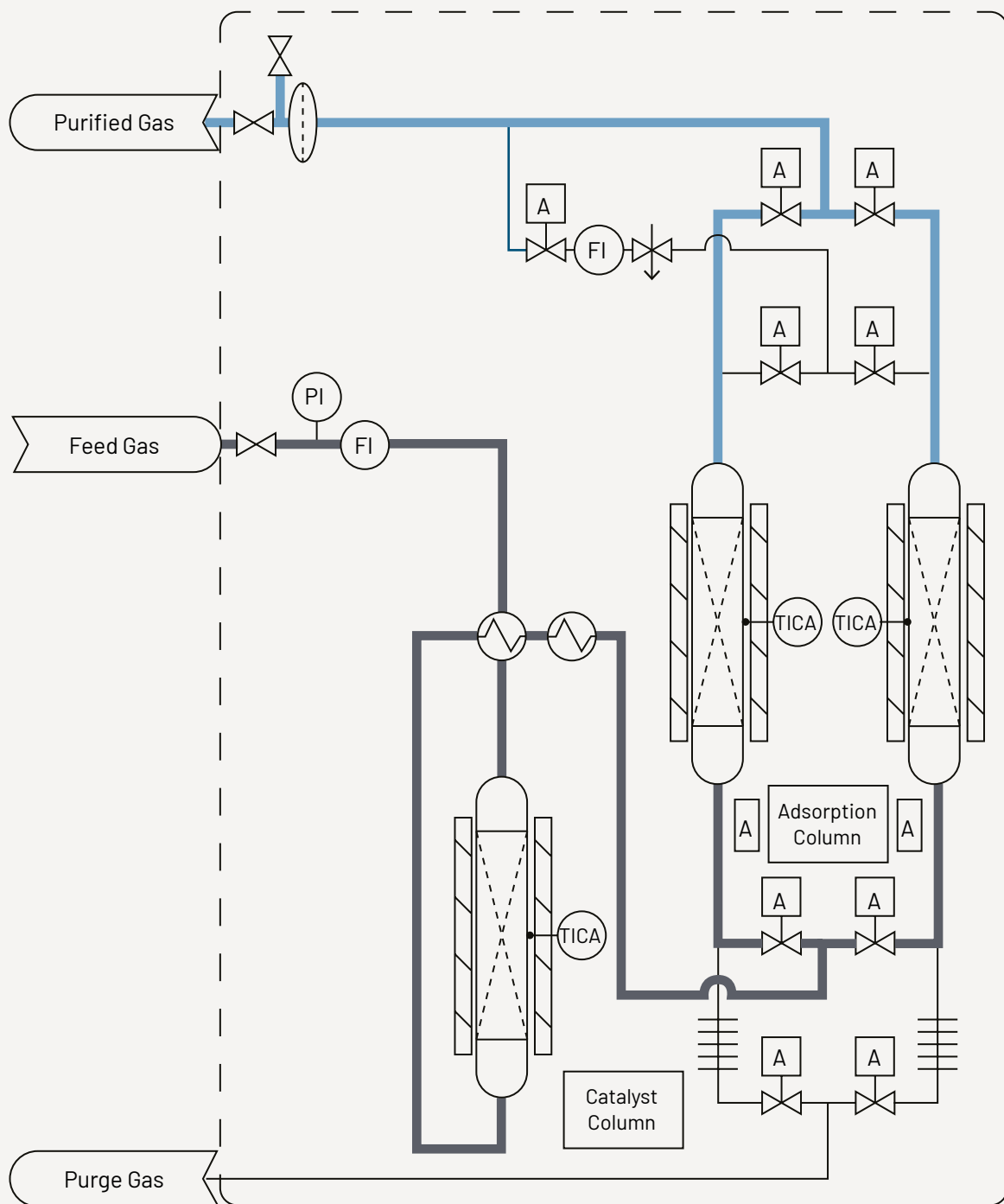
| SPNP             | INLET ppb | OUTLET ppb           |
|------------------|-----------|----------------------|
| O <sub>2</sub>   | 1,000     | ≤ 0.1 *              |
| CO <sub>2</sub>  | 500       | ≤ 0.1 *              |
| CO               | 1,000     | ≤ 0.1 *              |
| H <sub>2</sub>   | 1,000     | ≤ 0.5 *              |
| H <sub>2</sub> O | 2,600     | ≤ 0.1 *              |
| Particles        | -         | ≤ 1pce/cft , ≥ 0.1µm |
| Pressure         | 0.5MPaG   | ≥ 0.4MPaG            |

\* ≤ 1 ppb for Puremate - 1100

| Series | Throughput (Nm <sup>3</sup> /h) | Dimensions W x D x H (mm) |
|--------|---------------------------------|---------------------------|
| 1100   | 3                               | 450 x 600 x 1,650         |
|        | 6                               |                           |
| 1400   | 6                               | 400 x 600 x 1,750         |
|        | 10                              |                           |
|        | 20                              |                           |
|        | 30                              | 450 x 600 x 1,750         |
|        | 50                              | 600 x 700 x 1,750         |
|        | 100                             |                           |
|        | 200                             | 1,100 x 850 x 1,750       |
|        | 300                             | 1,300 x 1,000 x 1,850     |
|        | 400                             | 1,300 x 1,050 x 1,850     |
|        | 500                             | 1,400 x 1,100 x 1,850     |
|        | 1,000                           | 1,650 x 1,300 x 1,850     |
|        | 1,500                           | 1,650 x 1,900 x 2,050     |
|        | 2,000                           | 1,750 x 2,000 x 2,200     |

## O<sub>2</sub> purifiers SPOP series

Removes H<sub>2</sub>, CO, and CH<sub>4</sub> by catalysis  
and CO<sub>2</sub> and H<sub>2</sub>O by adsorption.



| SPOP             | INLET ppb | OUTLET ppb           |
|------------------|-----------|----------------------|
| CH <sub>4</sub>  | 30,000    | ≤ 0.1 *              |
| CO <sub>2</sub>  | 2,000     | ≤ 0.1 *              |
| CO               | 1,000     | ≤ 0.1 *              |
| H <sub>2</sub>   | 1,000     | ≤ 0.5 *              |
| H <sub>2</sub> O | 2,600     | ≤ 0.1 *              |
| Particles        | -         | ≤ 1pce/cft , ≥ 0.1µm |
| Pressure         | 0.5MPaG   | ≥ 0.4MPaG            |

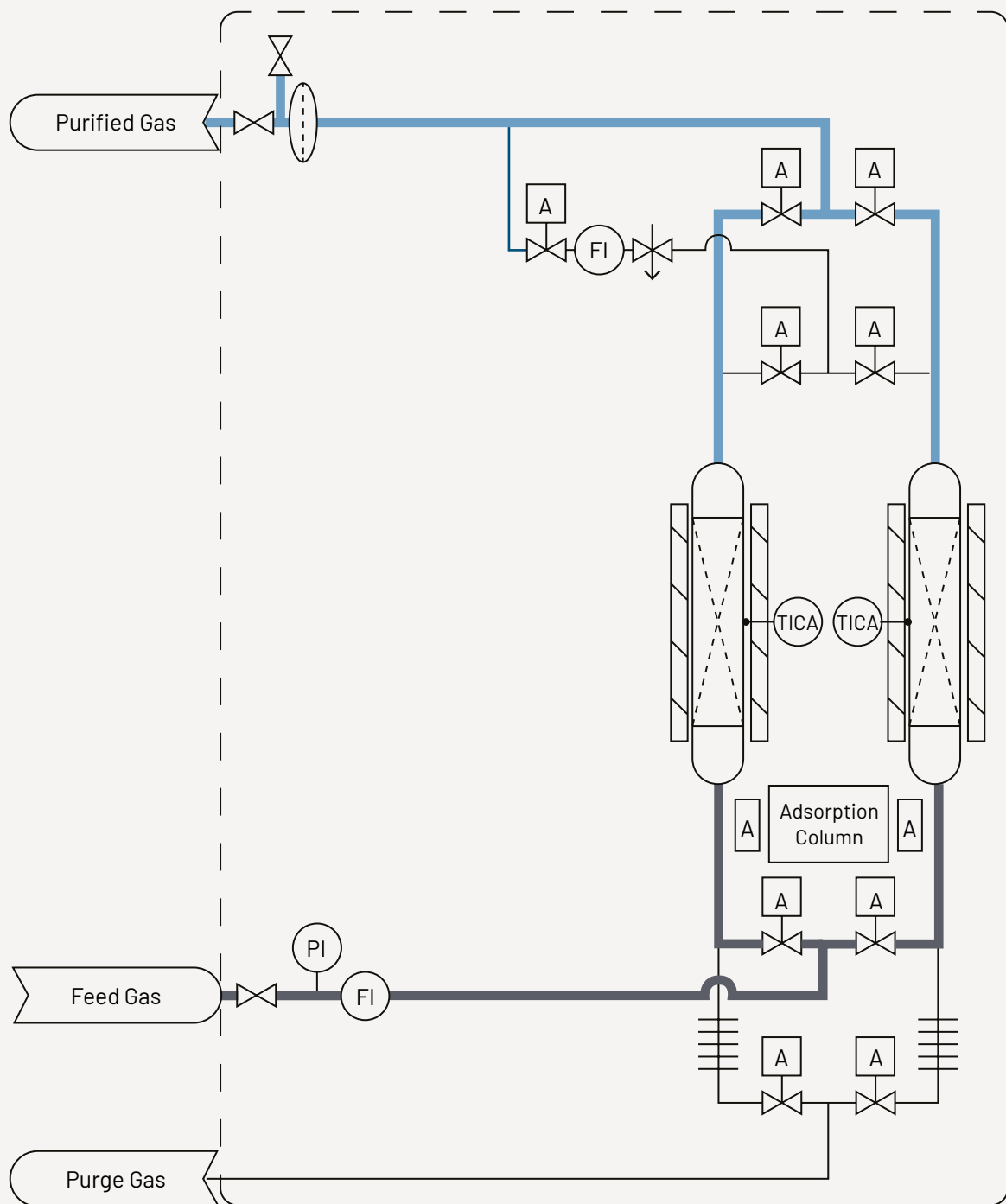
\* ≤ 1 ppb for Puremate - 1100

| Series | Throughput (Nm <sup>3</sup> /h) | Dimensions W x D x H (mm) |
|--------|---------------------------------|---------------------------|
| 1100   | 2                               | 450 x 600 x 1,650         |
|        | 3                               | 450 x 600 x 1,750         |
| 1400   | 3                               | 400 x 600 x 1,750         |
|        | 6                               | 700 x 700 x 1,750         |
|        | 10                              |                           |
|        | 20                              | 750 x 700 x 1,750         |
|        | 30                              | 850 x 900 x 1,750         |
|        | 50                              | 1,000 x 1,000 x 1,950     |
|        | 100                             | 1,250 x 1,250 x 1,950     |

## H<sub>2</sub> purifiers

### SPHP series

Removes O<sub>2</sub> and CO by catalysis and  
CO<sub>2</sub> and H<sub>2</sub>O by adsorption.



| SPHP             | INLET ppb | OUTLET ppb           |
|------------------|-----------|----------------------|
| O <sub>2</sub>   | 5,000     | ≤ 0.1 *              |
| CO <sub>2</sub>  | 1,000     | ≤ 0.1 *              |
| CO               | 1,000     | ≤ 0.1 *              |
| H <sub>2</sub> O | 10,000    | ≤ 1 *                |
| Particles        | -         | ≤ 1pce/cft , ≥ 0.1µm |
| Pressure         | 0.5MPaG   | ≥ 0.4MPaG            |

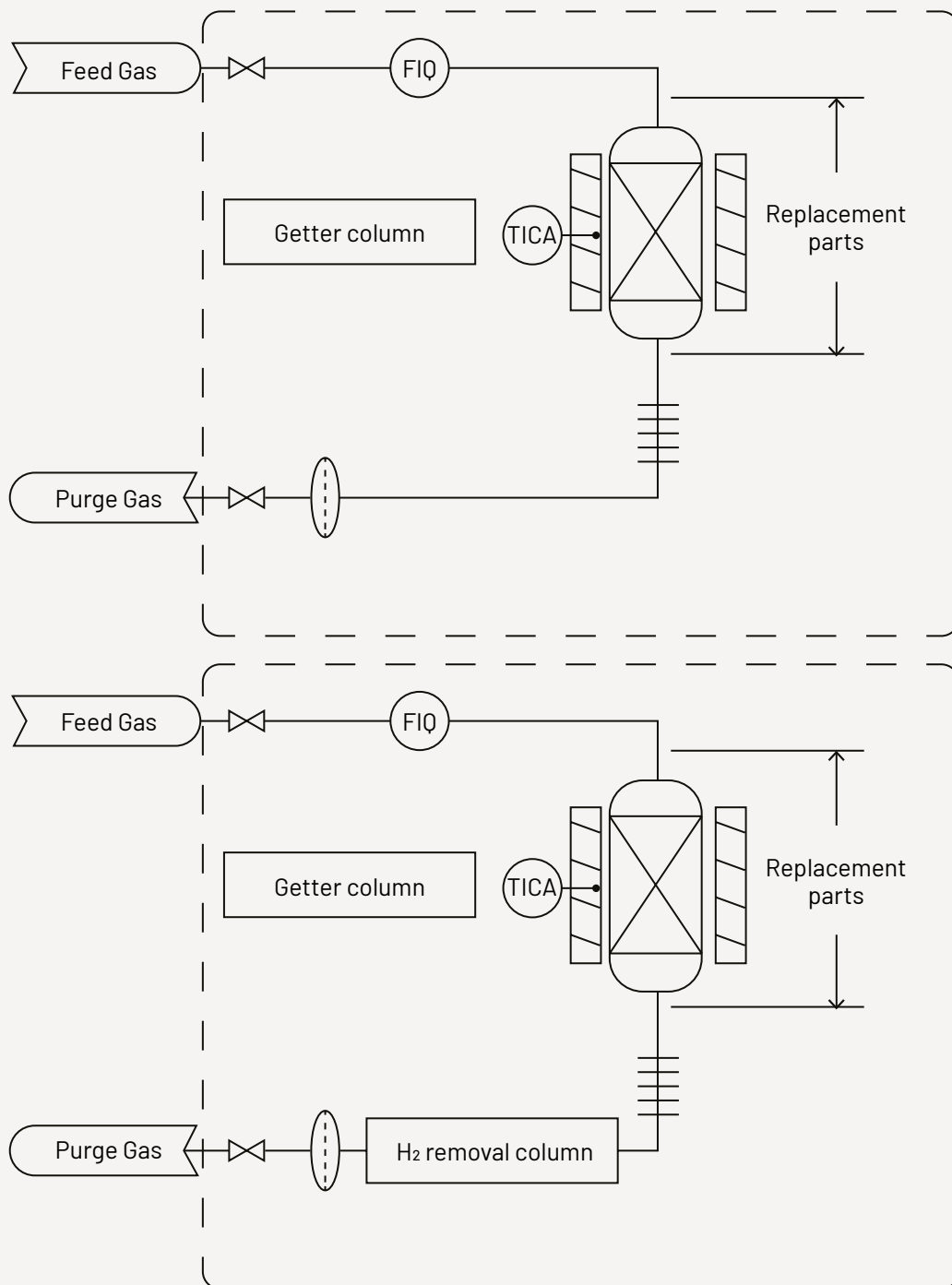
\* ≤ 1 ppb for Puremate - 1100

| Series | Throughput (Nm <sup>3</sup> /h) | Dimensions W x D x H (mm) |
|--------|---------------------------------|---------------------------|
| 1100   | 3                               | 450 x 600 x 1,650         |
|        | 6                               |                           |
| 1400   | 6                               | 400 x 600 x 1,750         |
|        | 10                              |                           |
|        | 20                              |                           |
|        | 30                              | 450 x 600 x 1,750         |
|        | 50                              | 600 x 700 x 1,750         |
|        | 100                             |                           |

## Getter purifiers

### SPAG, SPRG series

- Ar: APAG / He: SPRG
- Removes impurities to the maximum extent possible through gettering reaction using a special getter.



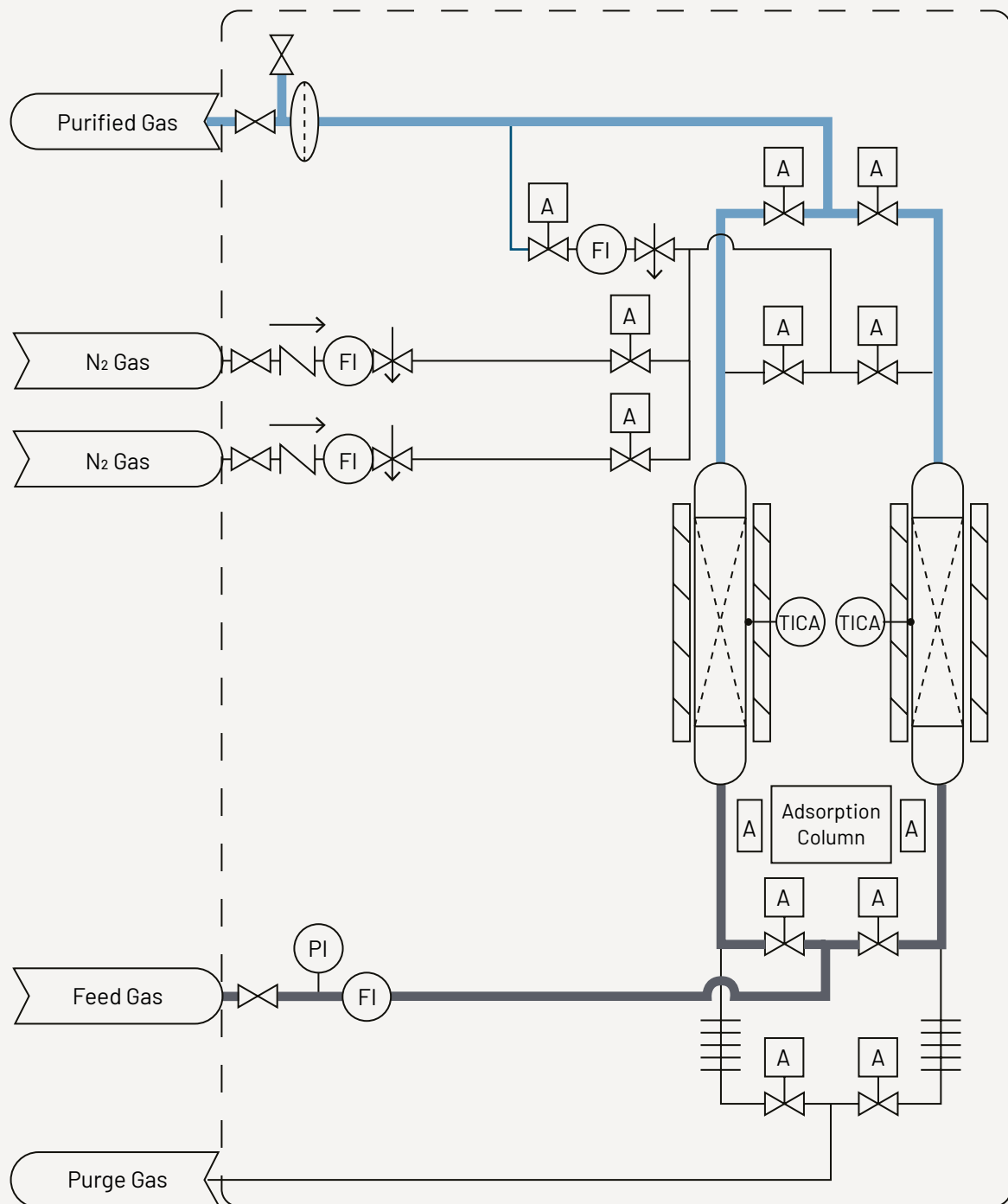
| SPAG             | INLET ppb | OUTLET ppb           |
|------------------|-----------|----------------------|
| N <sub>2</sub>   | 2,000     | ≤ 0.1                |
| CO <sub>2</sub>  | 100       | ≤ 0.1                |
| O <sub>2</sub>   | 100       | ≤ 0.1                |
| CO <sub>2</sub>  | 100       | ≤ 0.1                |
| CO               | 100       | ≤ 0.1                |
| H <sub>2</sub> * | 100       | ≤ 0.5                |
| H <sub>2</sub> O | 2,600     | ≤ 0.1                |
| Particles        | -         | ≤ 1pce/cft , ≥ 0.1μm |
| Pressure         | 0.5MPaG   | ≥ 0.4MPaG            |

\* ≤ 1 ppb for Puremate - 1100

| Series | Throughput (Nm <sup>3</sup> /h) | Dimensions W x D x H (mm) |
|--------|---------------------------------|---------------------------|
| 1400   | 1                               | 600 x 400 x 1,100         |
|        | 3                               |                           |
|        | 6                               | 600 x 500 x 1,550         |
|        | 10                              | 700 x 500 x 1,650         |
|        | 15                              | 900 x 600 x 1,750         |
|        | 20                              | 1,100 x 700 x 1,800       |
|        | 30                              |                           |

## NH<sub>3</sub> purifiers SPMP series

Removes O<sub>2</sub> by catalysis and H<sub>2</sub>O by adsorption.



| SPMP             | INLET ppb | OUTLET ppb           |
|------------------|-----------|----------------------|
| O <sub>2</sub>   | 5,000     | ≤ 5                  |
| H <sub>2</sub> O | 10,000    | ≤ 10                 |
| Particles        | -         | ≤ 1pce/cft , ≥ 0.1µm |
| Pressure         | 0.3MPaG   | ≥ 0.2MPaG            |

| Series | Throughout (Nm <sup>3</sup> /h) | Dimensions W x D x H (mm) |
|--------|---------------------------------|---------------------------|
| 1400   | 6                               | 500 x 650 x 1750          |
|        | 10                              | 800 x 750 x 1750          |
|        | 20                              | 900 x 800 x 1750          |
|        | 30                              |                           |
|        | 60                              | 1,000 x 900 x 1,750       |
|        | 100                             | 1,400 x 1,100 x 1,850     |
|        | 200                             |                           |
|        | 300                             | 1,700 x 1,300 x 1,850     |



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