

IonFree  
Ion exchange filter  
for fuel cells

- ✓ Modular
- ✓ Easy service
- ✓ Universal



# MANN+HUMMEL IonFree Ion exchange filter for fuel cells

## Functional description

- **Protection against electrical shorts in the stack:**  
IonFree keeps the conductivity of cooling liquid in fuel cells low through ion exchange technology
- **Optimum protection:** high quality ion exchange resin regarding capacity and purity
- **Easy to adapt:** different sizes, mounting positions, stud angles and stud types allow easy fit in almost every installation space
- **Clean and easy service:** no loss of high quality coolant as only the cartridge needs to be replaced

Large variety of possibilities for you to configure our modular kit to fit your specific application.

Please refer to our ion exchange filter family OmniFlow designed for multiple industry segments and applications such as material handling equipment, stationary applications and many more.



## Over 12 years experience with ion exchange filters



**Open the website for more information about products for electrified powertrains from MANN+HUMMEL.**



**Watch the video of the ion exchange filter for fuel cell systems.**



**Visit our E-Mobility Onlineshop to check our offerings and buy directly.**

MANN+HUMMEL memberships and partnerships in e-mobility and fuel cells:

Hydrogen Council

elektromobilität  
süd-west

EUROPEAN  
BATTERY  
ALLIANCE | EBA250

brennstoffzelle  
BW

VDMA  
Arbeitsgemeinschaft  
Brennstoffzellen  
(Fuel Cell Working Group)

European Clean  
Hydrogen Alliance



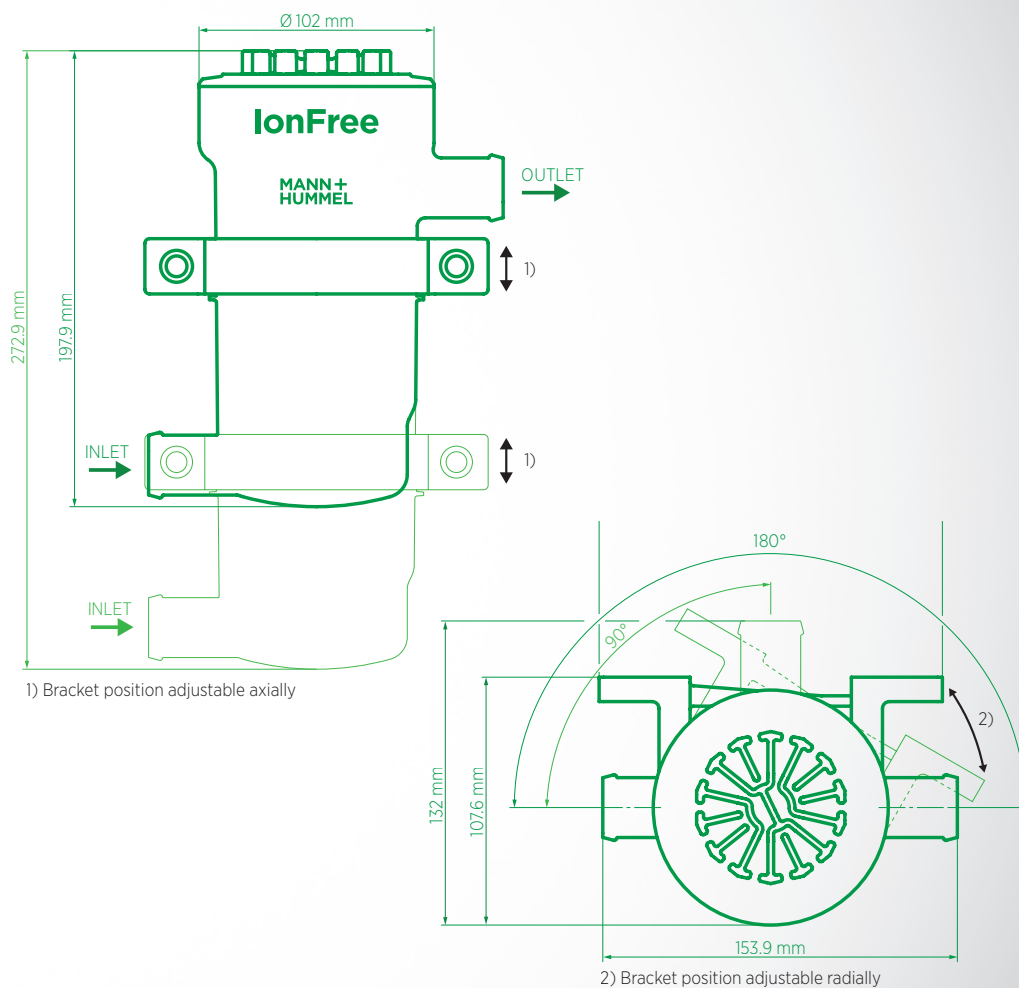
# MANN+HUMMEL IonFree

## Ion exchange filter for fuel cells

### Technical specification

|   | Medium capacity  | High capacity |
|---|--|---------------|
| Capacity (cation + anion)   | 820 meq  | 1,190 meq     |
| Amount of brackets  | 1  | 2             |
| Flow direction  | Bottom up  |               |
| Mounting orientation  | Vertical   |               |
| Connector   | DIN 3021-A 26 or VDA coupling DN 20  |               |
| Ion exchange resin  | 1:1 mixed bed of anion and cation resin in OH <sup>-</sup> / H <sup>+</sup> form |               |
| Max. pressure (absolute)  | 3.5 bar  |               |
| Operating temperature   | -40 °C to +90 °C   |               |
| Electrical conductivity   | < 5 µS/cm  |               |
| Pressure loss<br>(@ 10 l/min, 90 °C)  | < 230 mbar   | < 310 mbar    |
| Optional feature  | Different inlet nozzles to adjust the flow rate through the IonFree              |               |
| Cartridge spare part<br>order number  | ION 7001   | ION 7002      |
|  |  |               |
| Replaceable with a 64 mm 14 flutes wrench   |  |               |
|  |  |               |

### Dimensions



# MANN+HUMMEL IonFree

## Ion exchange filter for fuel cells

### Capacity

|        | Passenger car | Heavy duty |
|--------|---------------|------------|
| Medium | 820 meq       | -          |
| High   | -             | 1,190 meq  |

### Stud type

|               | Passenger car | Heavy duty |
|---------------|---------------|------------|
| DIN 3021-A 26 | ✓             | ✓          |
| VDA DN 20     | ✓             | ✓          |

### Stud angle

|            | Passenger car | Heavy duty |
|------------|---------------|------------|
| 180 degree | ✓             | ✓          |
| 90 degree  | ✓             | ✓          |

### Your IonFree matrix code

Example: Ion exchange filter for heavy duty applications with high capacity, VDA DN 20 stud and 180 degree angle.

| Your IonFree matrix code | IF | 2 | 2 | 1 |
|--------------------------|----|---|---|---|
|--------------------------|----|---|---|---|

### Matrix codes

| Capacity |
|----------|
| 1        |
| 2        |

| Stud type |
|-----------|
| 1         |
| 2         |

| Stud angle |
|------------|
| 1          |
| 2          |



Medium capacity – Passenger car applications



High capacity – Heavy duty applications



Hose clamp studs according to DIN 3021-A 26



VDA coupling DN 20



180 degree angle



90 degree angle



## MANN+HUMMEL Contact

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