# Gas Mass Flow Meter VB.5

## Model MF4700

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# 3. Knowing the products

## 3.1 Product description

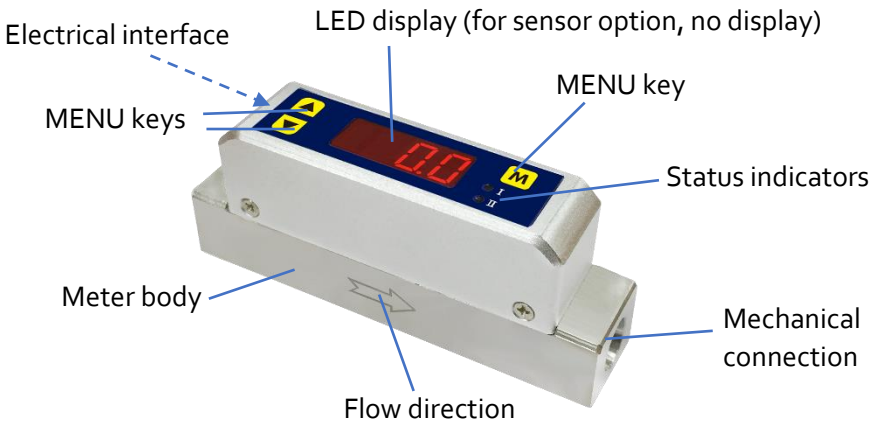



Figure 3.1: MF4700 parts description

## 3.2 Power and data cable description


Figure 3.2: MF/FS4701/03/08/10 connection and cable.

Table 3.1: MF/FS4701/03/08/10 pin/wire assignments.

| Wire | Color | Definition |
|---|---|---|
| 1 | Blue | RS485B (-) |
| 2 | Green | Analog output 4 ~ 20 mA /Analog output 0.5 ~ 4.5 Vdc |
| 3 | Red | Power supply, 8 ~ 24Vdc |
| 4 | Black | Ground |
| 5 | Yellow | RS485A (+) |

The standard cable has an AMPMODU MTE (5 positions) compatible connector with a length of 0.5 meters.

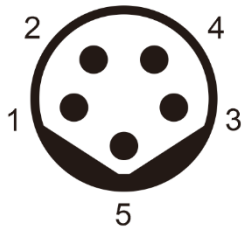
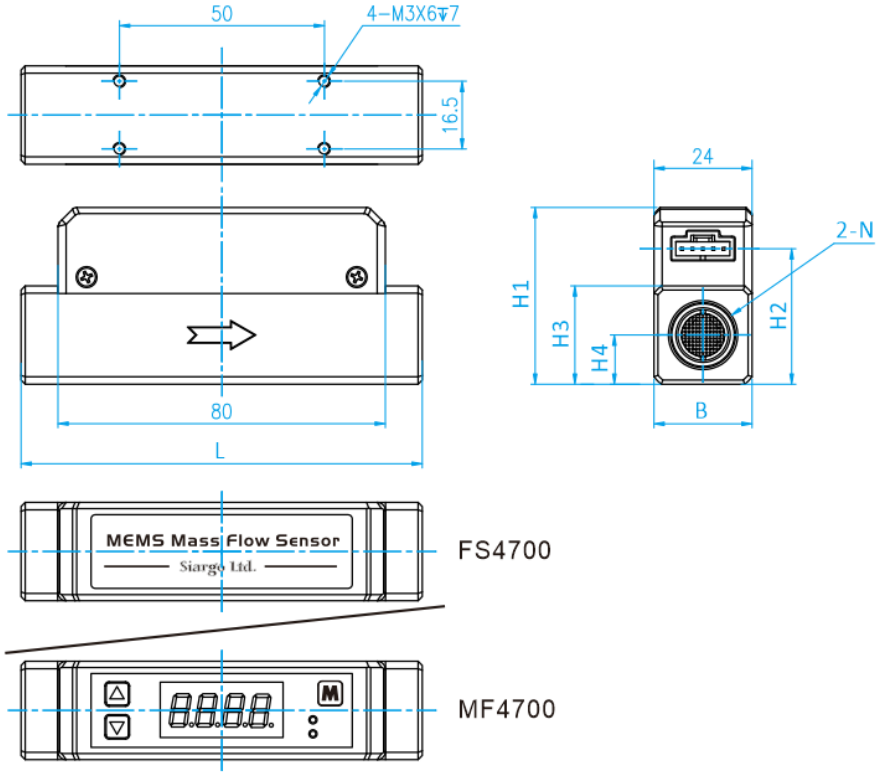



Figure 3.3: MF/FS4712/19 connection

Table 3.2: MF/FS4712/19 pin/wire assignments.

| Wire | Color | Definition |
|---|---|---|
| 1 | Brown | Power supply, 8 ~ 24Vdc |
| 2 | White | RS485B (-) |
| 3 | Blue | Ground |
| 4 | Black | RS485A (+) |
| 5 | Gray | Analog output 4 ~ 20 mA /Analog output 0.5 ~ 4.5 Vdc |

## 3.3 Mechanical dimensions




| Model | L | B | H1 | H2 | H3 | H4 | N |
|---|---|---|---|---|---|---|---|
| **FS4701 /03** | 98 | 24 | 39 | 29 | 20 | 10 | NPT 1/8", BSPT 1/8" |
| **MF4701/03** | 98 | 24 | 43 | 29 | 20 | 10 | NPT 1/8", BSPT 1/8" |
| **FS4708** | 98 | 24 | 43 | 33 | 24 | 12 | NPT 3/8", BSPT 3/8" |
| **MF4708** | 98 | 24 | 47 | 33 | 24 | 12 | NPT 3/8", BSPT 3/8" |
| **FS4710** | 118 | 30 | 49 | 39 | 30 | 15 | G 1/2" (BSPP 1/2") |
| **MF4710** | 118 | 30 | 53 | 39 | 30 | 15 | G 1/2" (BSPP 1/2") |

Figure 3.4: MF/FS4701/03/08/10 dimensions

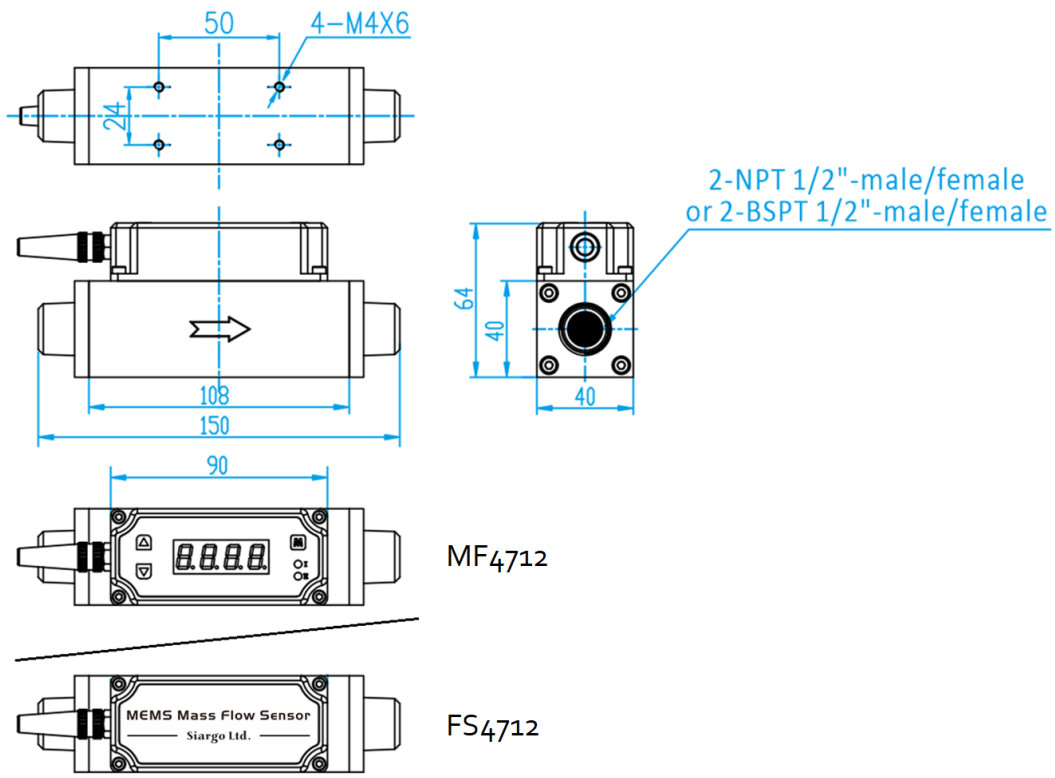



Figure 3.5: MF/FS4712 dimensions

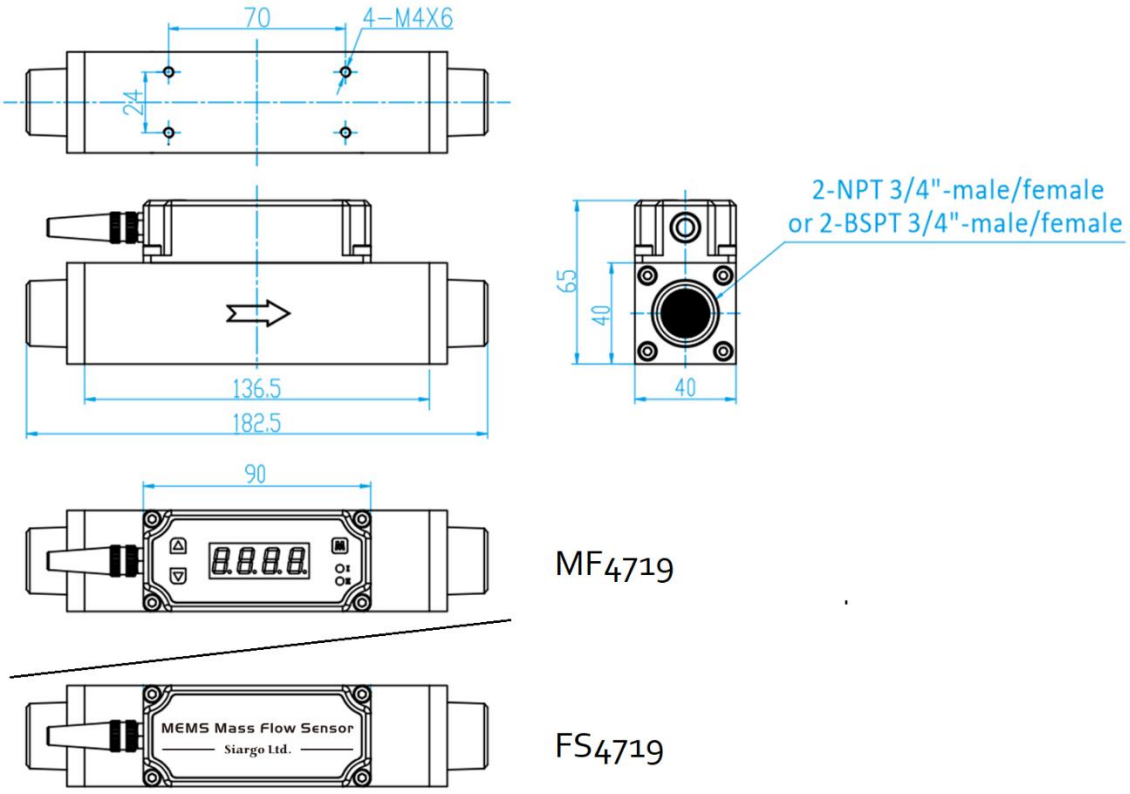



Figure 3.6: MF/FS4719 dimensions

### 5.4.2 MENU function input sequence

At the flow measurement (main) display, press the three MEMU keys, it will allow the user to perform a variety of settings of the product. The following graph details the key sequence for each function, and some detailed explanations are followed after the graphic presentation.

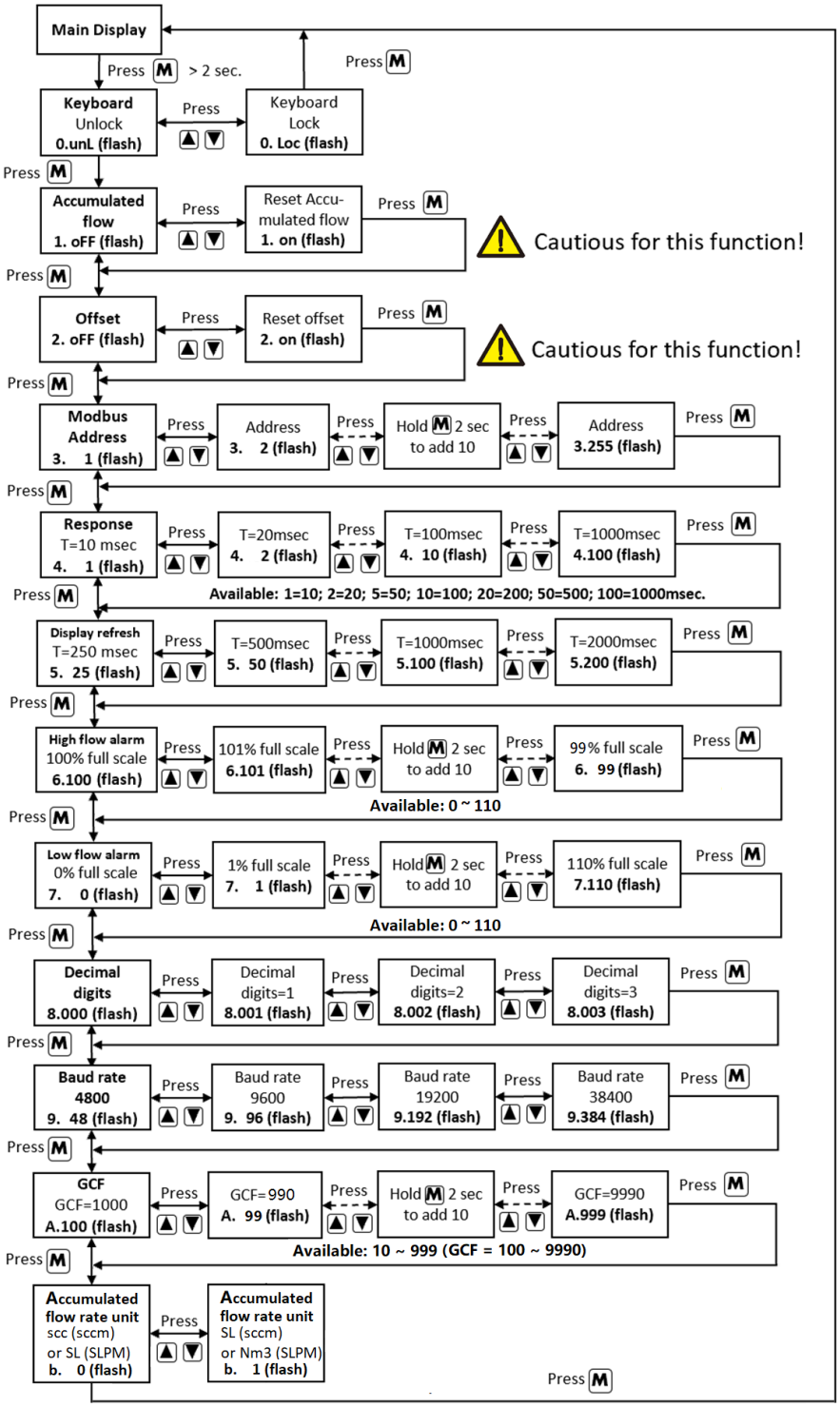



Figure 5.2: MF4700 menu flow chart

## 6. Product selection

The product part number is composed of the product model number and suffixes indicating the full-scale flow rate, as well as the other parameters. Refer to the following for details.

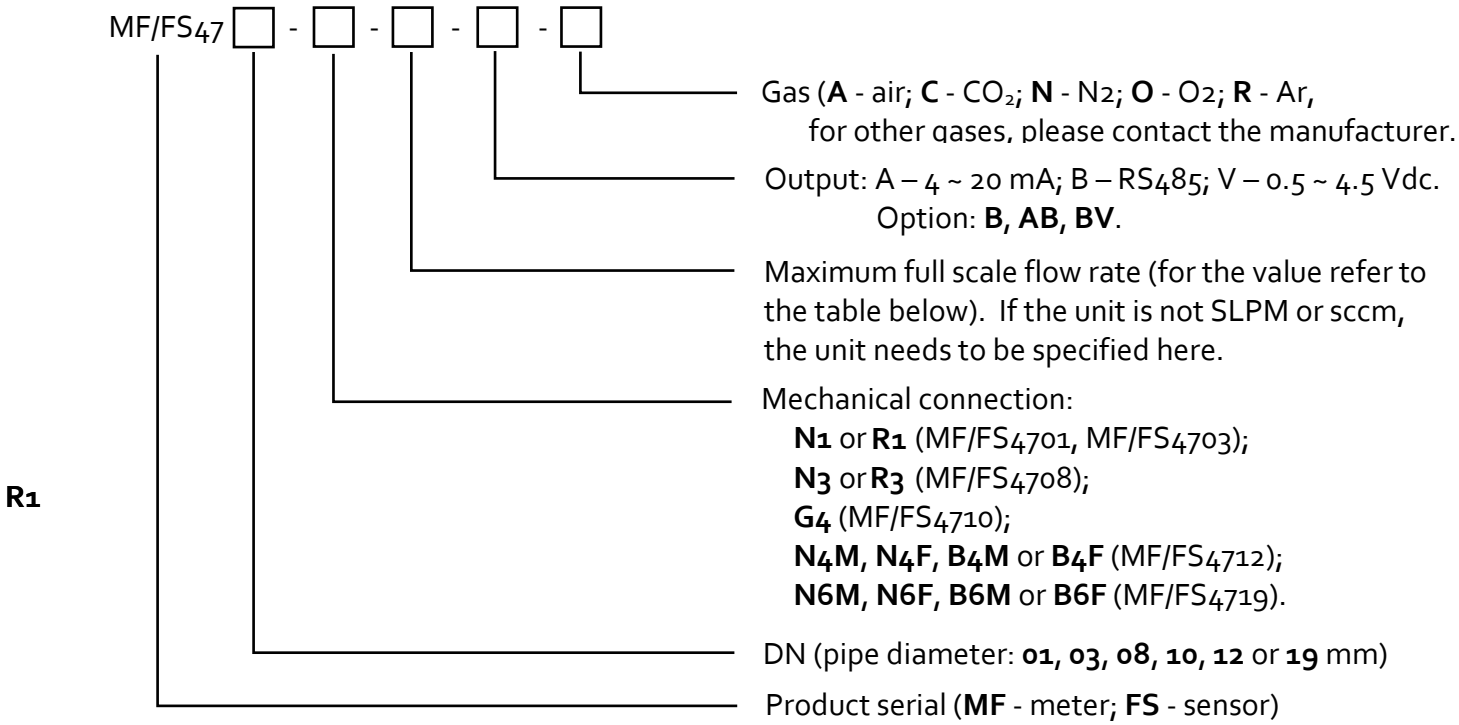



Table 6.1: Mechanical connection and full-scale flow range of all models.

| Model | DN (mm) | Mechanical Connection | Flow range | | |
|---|---|---|---|---|---|
| | | | sccm | SLPM | SCFH |
| MF/FS4701 | 1.0 | **N1** - NPT 1/8"-female, **R1** - BSPT 1/8"-female | 0 ~ 100, 200, 500 | | 0 ~ 1 |
| MF/FS4703 | 3.0 | **N1** - NPT 1/8"-female, **R1** - BSPT 1/8"-female | 0 ~ 1000, 2000, 5000 | 0 ~ 1, 2, 5 | 0 ~ 2, 5, 10 |
| MF/FS4708 | 8.0 | **N3** - NPT 3/8"-female, **R3** - BSPT 3/8"-female | | 0 ~ 10, 20, 50 | 0 ~ 20, 50, 100 |
| MF/FS4710 | 10.0 | **G4** - G1/2"-female (BSPP 1/2"-female) | | 0 ~ 100 | 0 ~ 200 |
| MF/FS4712 | 12.0 | **N4M** - NPT 1/2"-male, **N4F** - NPT 1/2"-female, **B4M** - BSPT 1/2"-male, **B4F** - BSPT 1/2"-female | | 0 ~ 200, 300 | 0 ~ 400, 600 |
| MF/FS4719 | 19.0 | **N6M** - NPT 3/4"-male, **N6F** - NPT 3/4"-female, **B6M** - BSPT 3/4"-male, **B6F** - BSPT 3/4"-female | | 0 ~ 500, 800, 1000 | 0 ~ 1000, 1500, 2000 |

## 7. Technical specifications

All specifications listed in the following table unless otherwise noted apply for calibration conditions at 20°C and 101.325 kPa absolute pressure with air. The product is horizontally mounted at the time of calibration.

| | Value | Unit |
|---|---|---|
| Full-scale flow range | See table 6.1 | SLPM |
| Accuracy | ±(2.0+0.5FS) | % |
| Repeatability | 0.75 | % |
| Turn-down ratio | 50:1 | |
| Working temperature | -10 ~ 55 | °C |
| Maximum pressure | 1.0 | MPa |
| Humidity | <95, no condensation | %RH |
| Power supply | 8 ~ 24 (50 mA) | Vdc |
| Temperature coefficient | 0.12 | %/°C |
| Pressure effect | Null | |
| Digital output | RS485 Modbus half-duplex | |
| Analog output | 0.5 ~ 4.5 Vdc / 4 ~ 20 mA | |
| Electrical connector | AMPMODU MTE 5 positions | |
| MENU access | 3 key – front face keyboard/digital | |
| Display | Instant flow rate, totalizer, or accumulated flow rate with LED & 2 indicators | |
| Mechanical connection | NPT, BSPT, or customized | |
| Protection | IP40 | |
| Storage temperature | -20 ~ 70 | °C |
| Reference conditions | 20°C, 101.325 kPa, air | |
| Fluid compatibility | Non-corrosive | |
| CE | EN61326-1; -2; -3 | |

| | MF/FS4701 | MF/FS4703 | MF/FS4708 | MF/FS4710 | MF/FS4712 | MF/FS4719 | |
|---|---|---|---|---|---|---|---|
| Maximum overflow | 6 | 30 | 200 | 400 | 600 | 2000 | SLPM |
| Maximum flow change | 1 | 4 | 30 | 60 | 100 | 300 | SLPM /sec |

**Note** 1. For other features or specifications not listed, please contact the manufacturer.