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# BM series

## PD METER



### 1. Overview

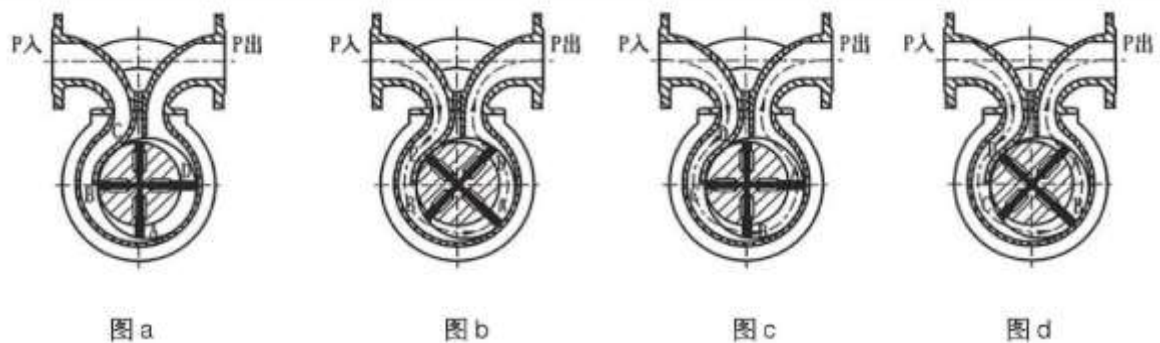
Graphite scraper meter is special application for the custody transfer of light oil, offer the measurement with high accuracy, and widely use for gasoline, diesel, aviation oil etc. Having the notable features of high accuracy and good repeatability, specially with the accuracy of 0.1% and repeatability of 0.03% under the max turn down ratio of 13:1, it also has the excellent performance of long time running.

The mechanical register which equipped with meter together will display the volume which pass through the meter, and display the flow rate when equipped with mechanical flow indicator, if we want to act remote

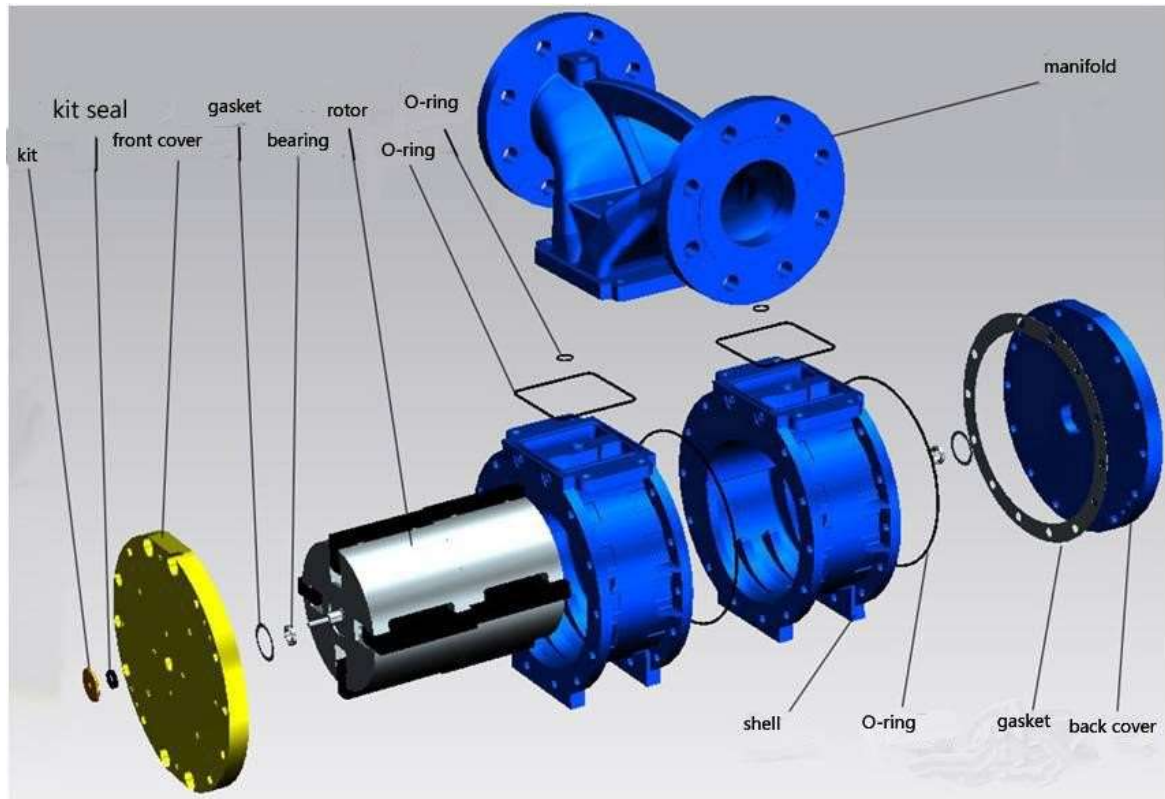
transmission control function, here we need to add a pulser emitter at meantime. Depend on the different requirement from customer, the meter also can equipped with intelligent electronic with LCD or OLED display. In order to ensure the highest accuracy of the meter, we can act the special setting when calibration. So it widely use for master meter, it is the best performance of PD meter at present.

## 2. Working principle

When the vane in the position of figure a, vane A and D will stretched out of the rotor thoroughly, then Vane B and C will get into the rotor thoroughly, after the fluid get into the meter, the rotor will start to rotate counterclockwise under promotion by the pressure difference. when the rotor and vane rotate by the round eight molecules one as figure b indicate, Vane A will stretched out of the rotor thoroughly, Vane D start to shrink, Vane C still in the status of shrink, then Vane B start to stretched out of the rotor. when the rotor and vane rotate by the a quarter round as figure c indicate, Vane A still stretched out of the rotor thoroughly and Vane B also , hereafter the fluid which into the meter will form a precisely volume by fulling the space between the Vane A, Vane B, rotor, chamber of measurement body and end cover. Along with the rotation of rotor and vane, it means attach to the position of figure d, the fluid between the Vane A and B will discharge by the action which Vane A was shrink , and at the meantime the Vane C start to stretched out, then the fluid will form a precisely volume again between the Vane Band C, thereby get to the target that measure the fluid. the two pairs vane will discharge four unit volume every rotation, and the movement of rotor rotation will transfer to counter part by the coupling, then act the display on local side or electronic signal transmit.



### 3. Product structure and type



### 4. Features

- High accuracy, repeatability and big turn down ratio, especially when the flow meter running, the vane was rotation by the promotion of the fluid inside the measure chamber, the self-lubricating vane will get attach to the inner wall of the chamber all the time, it avoid the fluid leakage, so the accuracy can high to 0.1% and repeatability to 0.03%.
- Smooth operation, no pulsating flow and low noise
- Good accuracy keeping when long time running
- Less influences of pressure fluctuation

- Easy installation, no need the straight pipe up and downstream of meter

## 5. Performance

| ITEM                                | Basic Parameter              |                 |        |        |
|-------------------------------------|------------------------------|-----------------|--------|--------|
| Size                                | 2 “                          | 3 “             | 4 “    | 6 “    |
| Accuracy                            | ±0.1%/±0.2%                  |                 |        |        |
| Repeatability                       | Better than 0.03%            |                 |        |        |
| Flow rate range (m <sup>3</sup> /h) | 3~30                         | 6~80<br>(6~120) | 12~150 | 18~216 |
| Pressure (bar)                      | 10/16                        |                 |        |        |
| Working temperature (°C)            | -50~+80                      |                 |        |        |
| Weight (~kg)                        | 38                           | 54              | 102    | 155    |
| Flange standard                     | ANSI B 16.5 & GB/T 9113-2010 |                 |        |        |

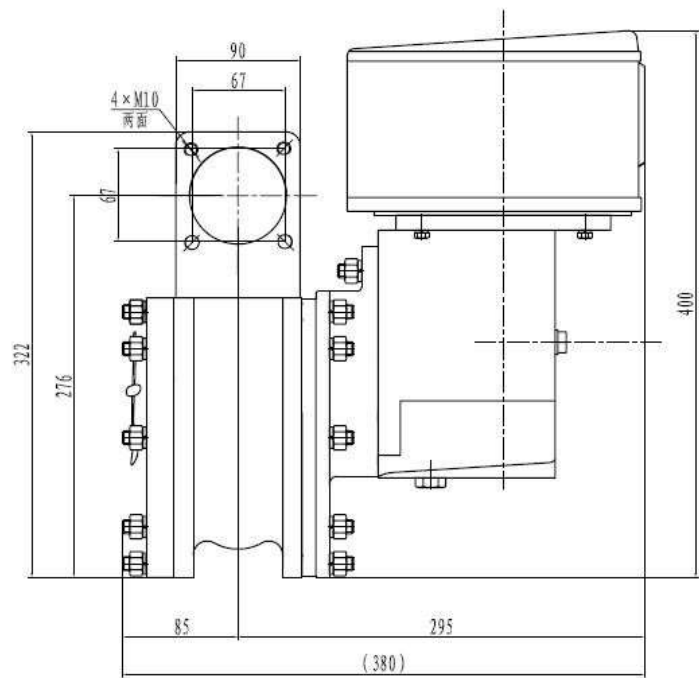
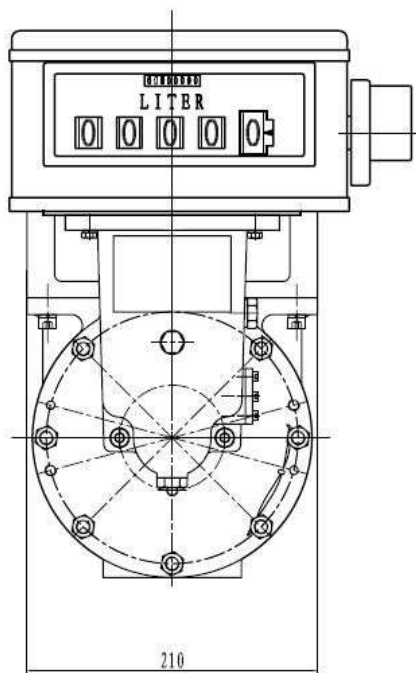
## 6. Model selection

| Measurement unit |      |          |       |              | Indicator              | Description |                               |
|------------------|------|----------|-------|--------------|------------------------|-------------|-------------------------------|
| Type             | Size | Pressure | Fluid | Working TEM. |                        |             |                               |
| BM               |      |          |       |              | Mechanical /Electronic |             |                               |
|                  |      |          |       |              |                        | Size        | Flow rate (m <sup>3</sup> /h) |
|                  | 05   |          |       |              |                        | 2”          | 3~30                          |
|                  | 08   |          |       |              |                        | 3”          | 6~80                          |
|                  | 10   |          |       |              |                        | 4”          | 12~150                        |
|                  | 15   |          |       |              |                        | 6”          | 18~216                        |

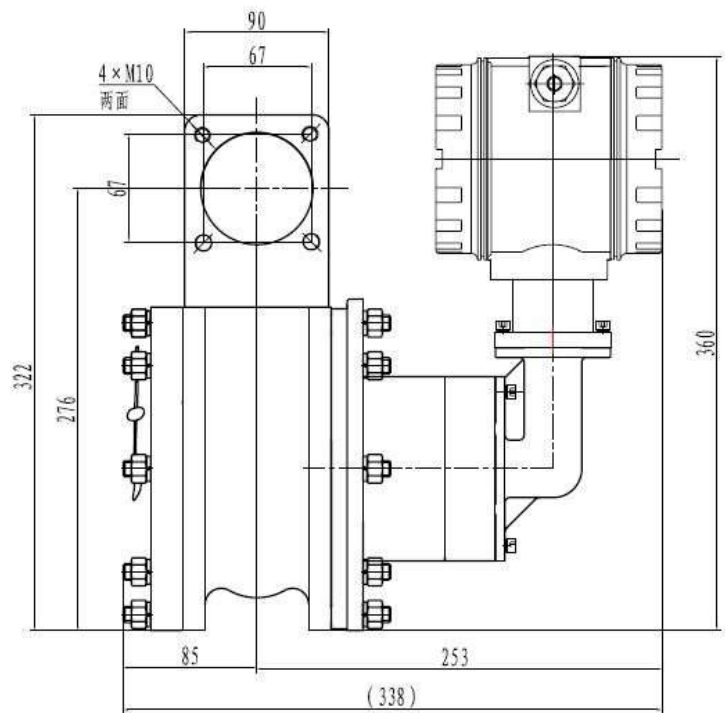
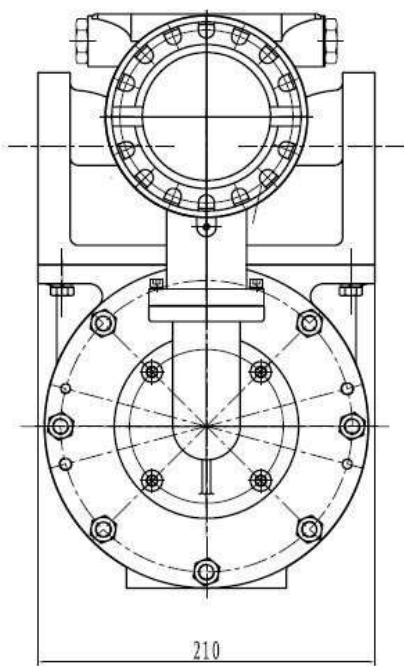
|     |    |   |   |   |  |     |   |       |
|-----|----|---|---|---|--|-----|---|-------|
| BMD | 08 |   |   |   |  |     | 3"  | 6~120 |
|     |    | B |   |   |  |     | 10bar   |       |
|     |    | C |   |   |  |     | 16bar   |       |
|     |    |   | A |   |  |     | Jet fuel                                      |       |
|     |    |   | Q |   |  |     | Gasoline/Diesel                               |       |
|     |    |   |   | N |  |     | -30~+80℃                                      |       |
|     |    |   |   | L |  |     | -50~+80℃                                      |       |
|     |    |   |   |   |  | M   | Mechanical counter                            |       |
|     |    |   |   |   |  | MI  | Mechanical counter<br>+Flow indicator         |       |
|     |    |   |   |   |  | MP  | Mechanicalcounter+Pulser                      |       |
|     |    |   |   |   |  | MPI | Mechanical counter+<br>Pulser +Flow indicator |       |
|     |    |   |   |   |  | L1  | Electronic L/type<br>(temperature:-30~+80℃)   |       |
|     |    |   |   |   |  | L2  | Electronic L/type<br>(temperature:-50~+80℃)   |       |
|     |    |   |   |   |  | G1  | Electronic G/type<br>(temperature:-30~+80℃)   |       |
|     |    |   |   |   |  | G2  | Electronic G/type<br>(temperature:-50~+80℃)   |       |

7. Figuration and installation dimension

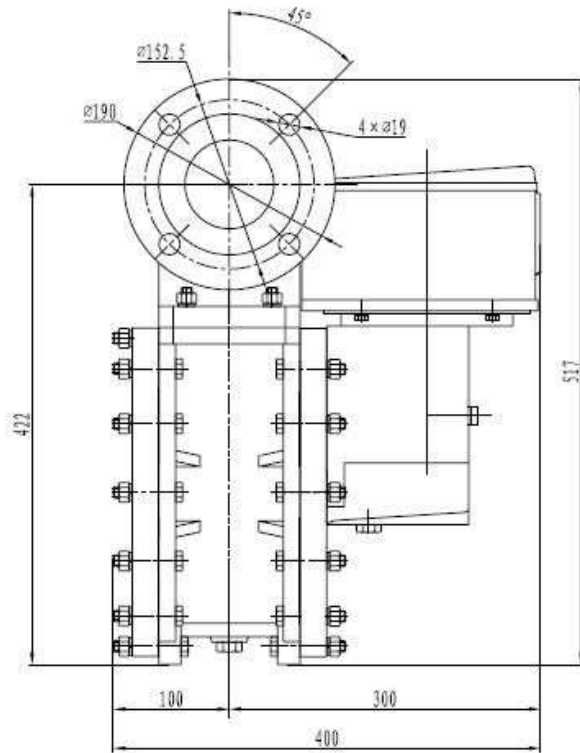
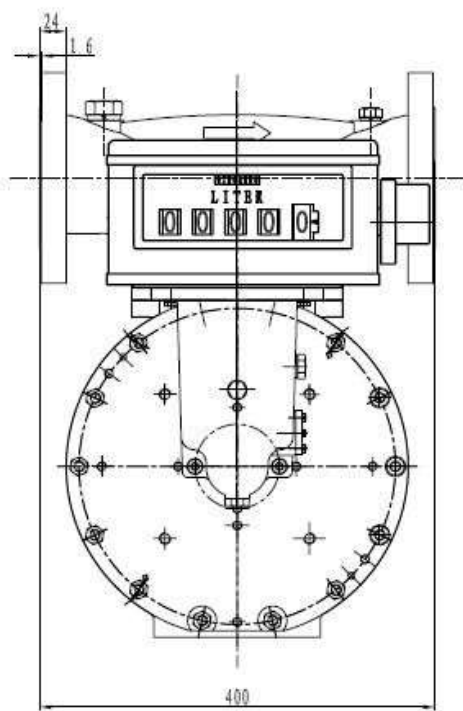
- BM05(equip with mechanical counter)



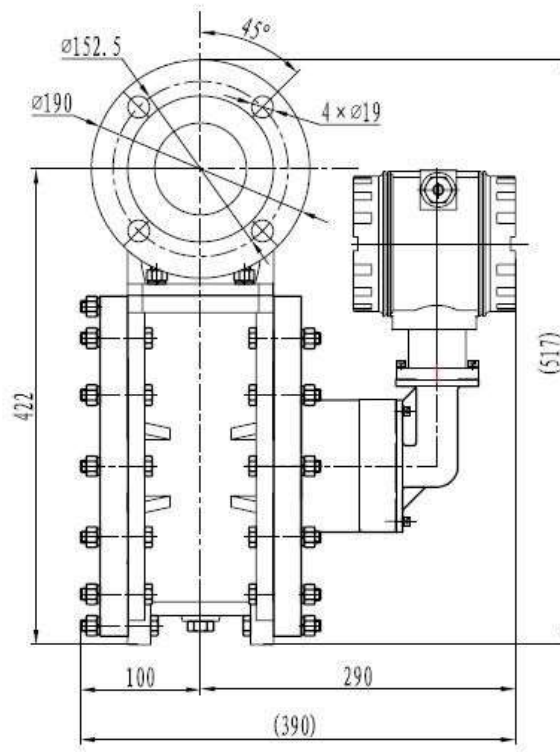
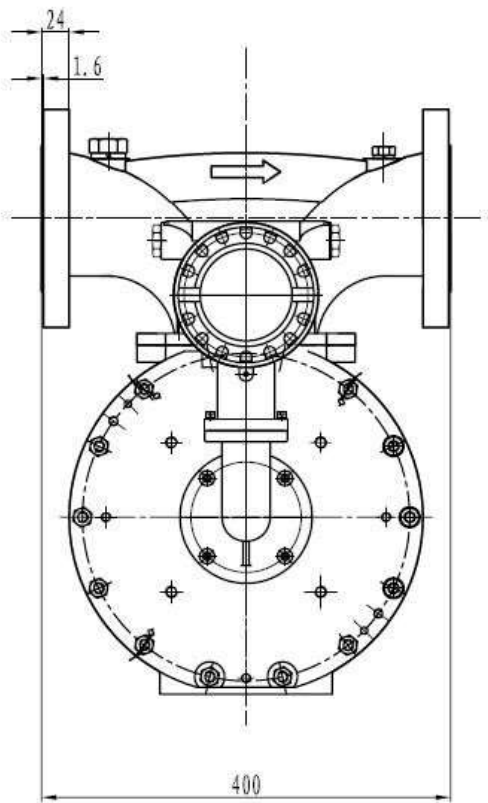
➤ BM05 (equip with L type electronic)



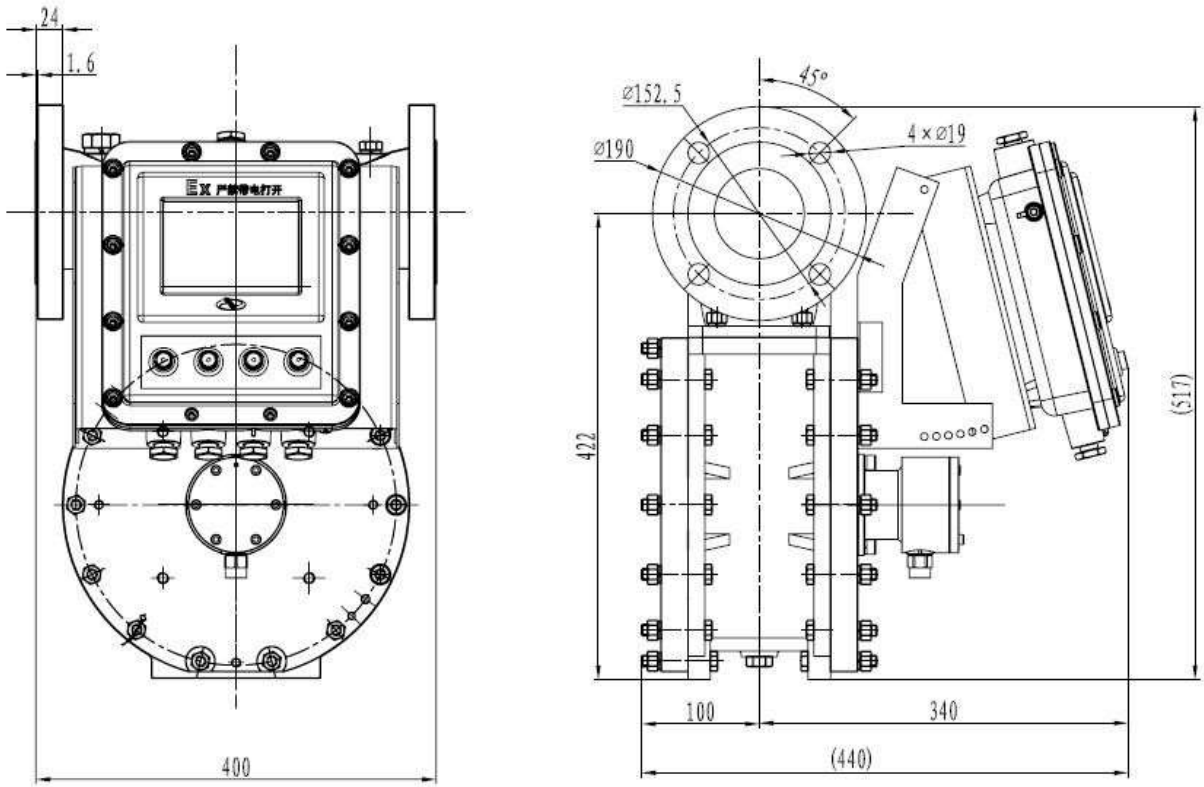
➤ BM08 ((equip with mechanical counter)



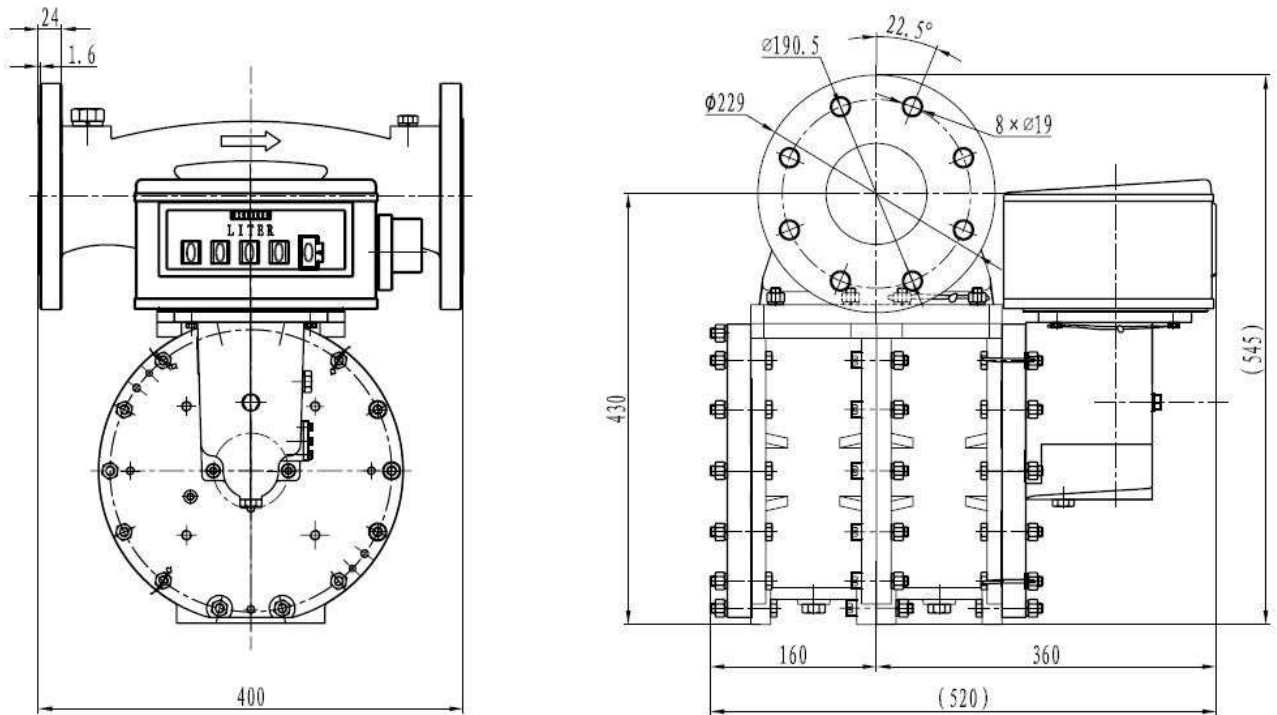
➤ BM08(equip with L type electronic)



BM08 (equip with G type electronic)

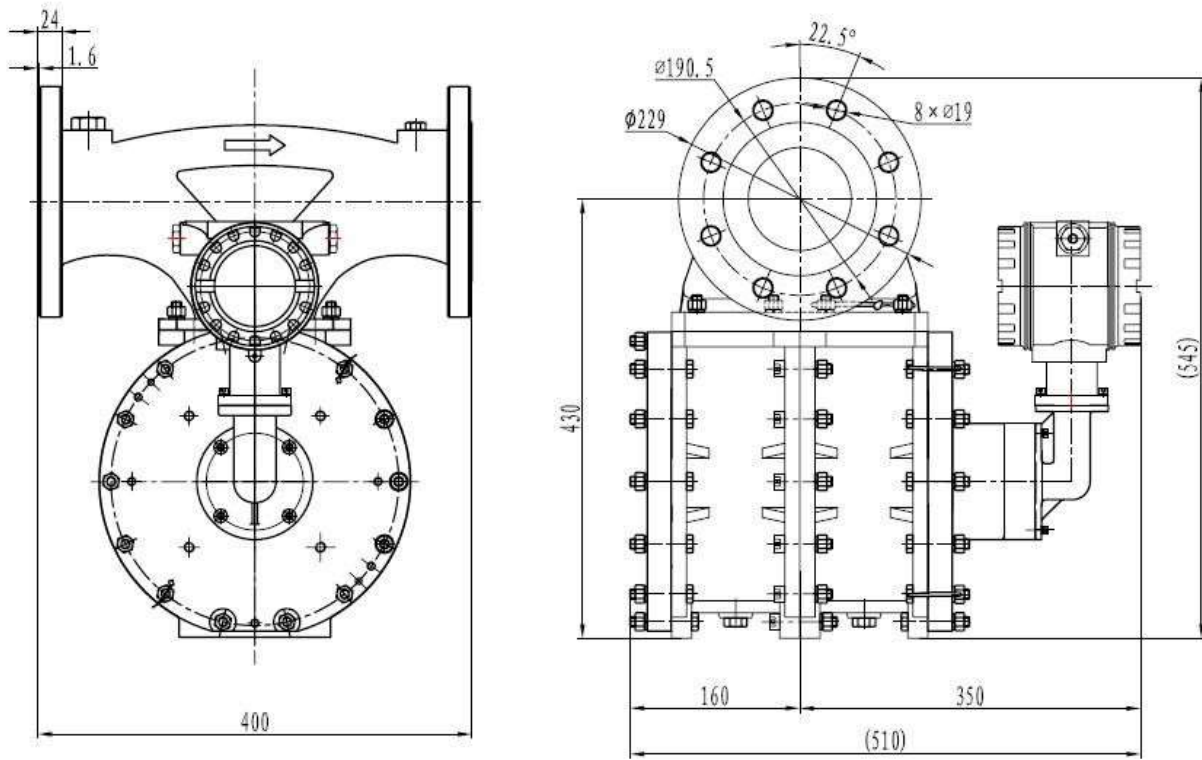


➤ BM10 (equip with mechanical counter)

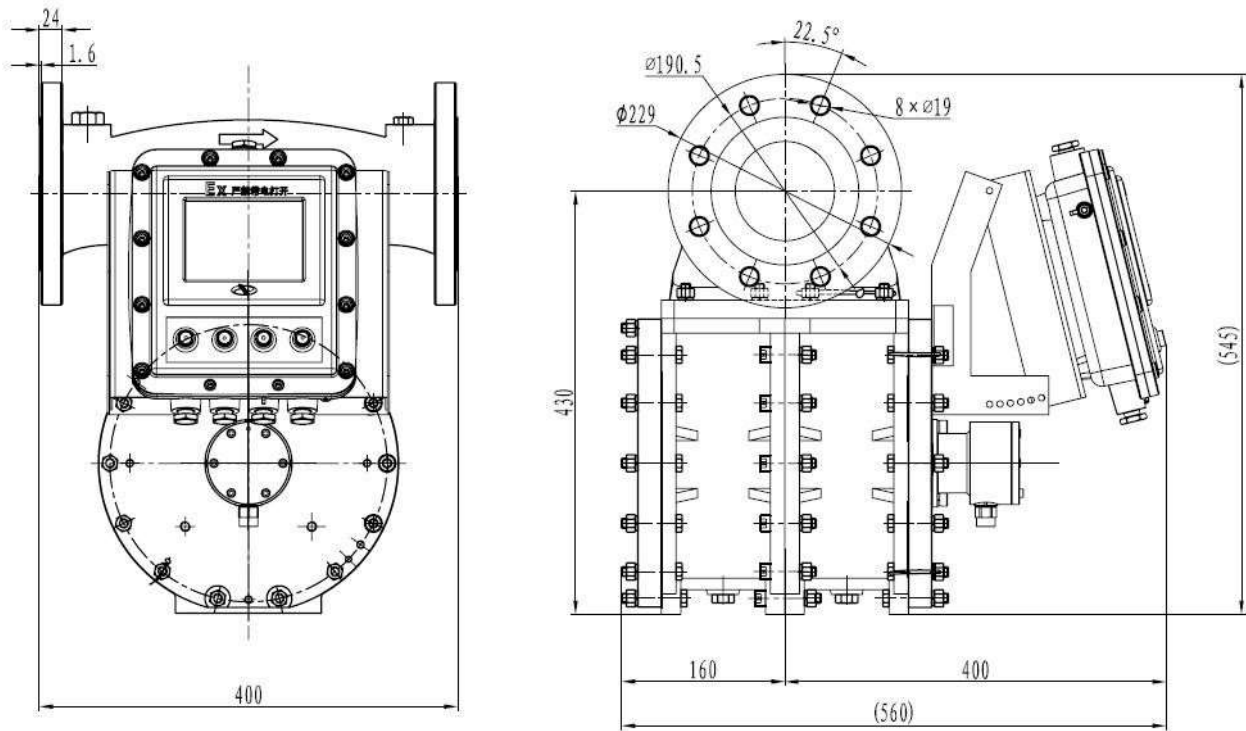


BM10 (equip L type electronic)

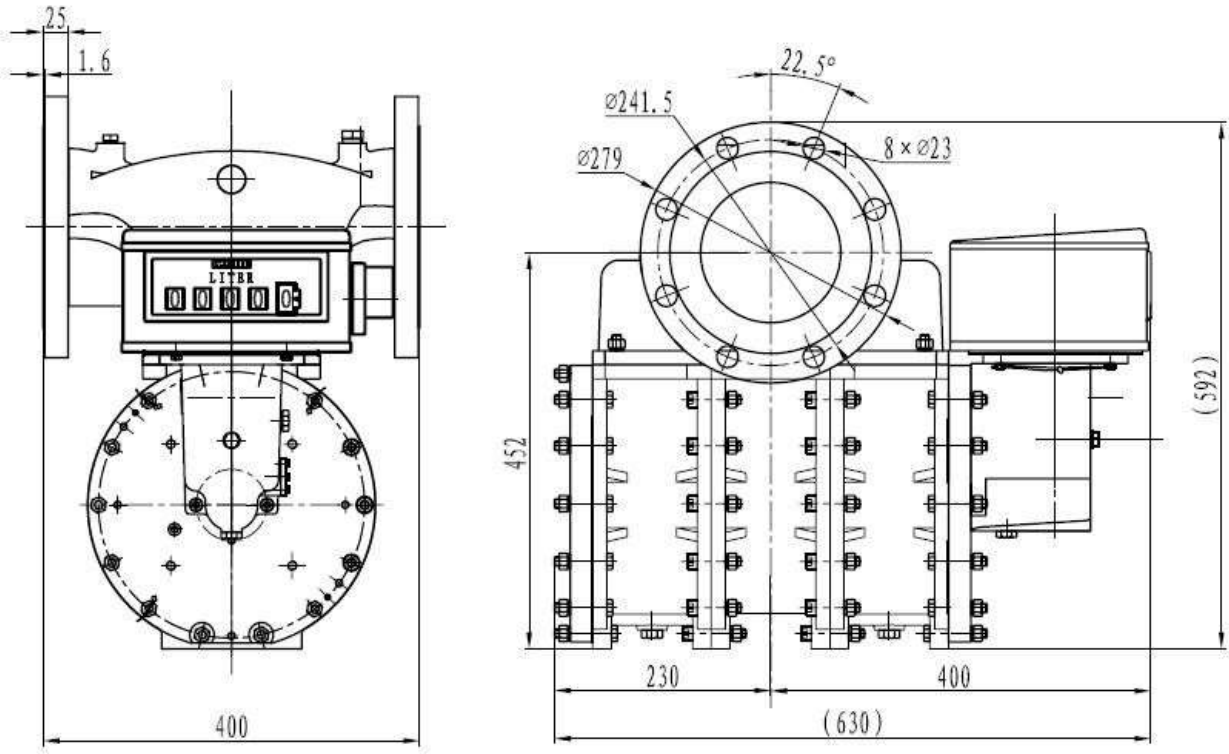




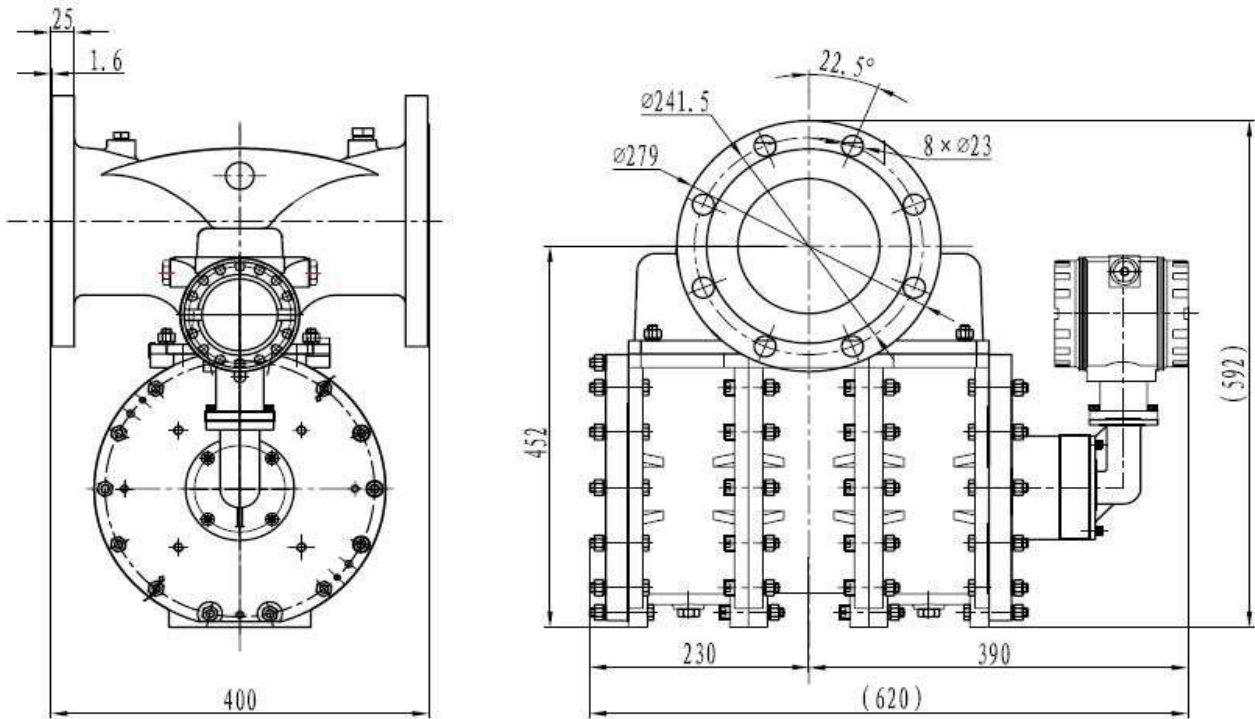
➤ BM10 (equip with G type electronic)



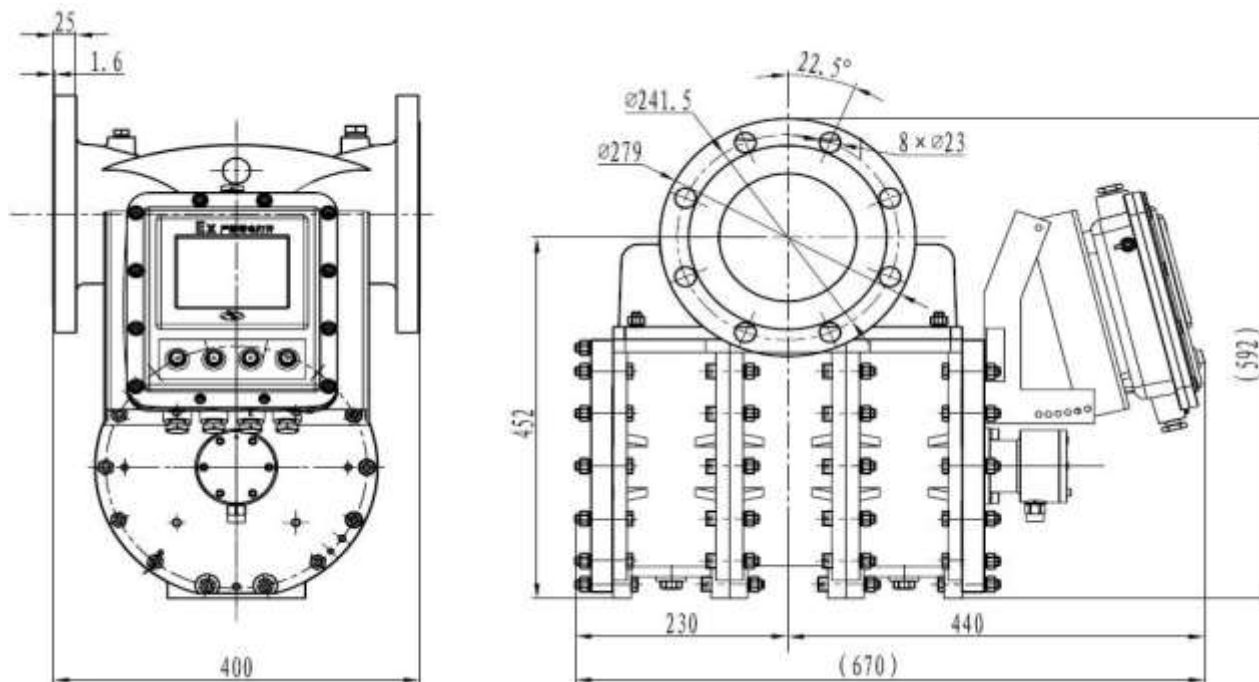
BM15 (equip mechanical counter)



➤ BM15 (equip with L type electronic)



BM15 (equip with G type electronic)



## 8. Application

### 1) Custody transfer of oil terminal



Because of its high accuracy and good performance for long time running, the PD meter was widely used for truck, train and ship loading system.

## 2) Refueller for aircraft



Base on the character of high accuracy and good performance, the PD meter is also widely application on aviation field, for the refueling of aircraft.