

## Pitot tube

### Model FLC-APT-E, extractable version

### Model FLC-APT-F, fixed version

WIKA data sheet FL 10.05

FloTec

#### Applications

- Oil production and refining
- Water treatment and distribution
- Gas processing and transmission
- Chemical and petrochemical industry

#### Special features

- Suitable for liquid, gas and steam flow measurement
- Accuracy  $\pm 2\%$  of actual flow rate
- Repeatability of measurement 0.1 %
- Ensure the lowest pressure loss in the family of primary flow elements (approx.  $< 1\%$ )



#### Pitot tubes

Fig. left: Extractable version, model FLC-APT-E

Fig. right: Fixed version, model FLC-APT-F

#### Description

FloTec is a multiport self-averaging flow meter with a design based on the classical pitot tube concept. This pitot tube produces an averaged differential pressure proportional to the square of the flow rate.

The differential pressure output of the flow meter is normally connected to a differential pressure transmitter in order to generate an electrical signal from the differential pressure. This electrical signal is proportional to the flow rate.

A differential pressure gauge or a differential pressure switch can be used to provide local indication of the flow rate or for switching tasks.

The pitot tube is suitable for the measurement of one-phase fluids which completely fill the cross-section of the pipe.

## Specifications

### Nominal size and pipe schedule

Nominal sizes of 50 ... 1,800 mm (2" ... 72")

The pipe schedule must be specified by the customer.

The overview on page 4 will help to select the best suitable version.

### Nominal pressure rating

Depending on the selected mounting type, the flange will respect the nominal pressure rating of the pipeline (in accordance with the relevant standards).

For mounting types, see page 3

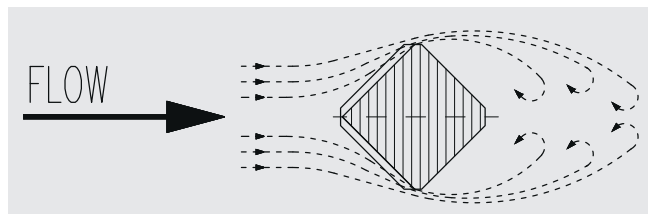
### Materials

Completely made from stainless steel AISI 316.

Other materials are available on request

### Profile shape

The upstream side of the FloTec is designed to generate a break point, due to which the medium passes around the pitot tube without causing any turbulence. This feature creates a stable pressure with a constant flow coefficient at the downstream measuring point, even at high flow rates. Thus a very wide range of applications in the field of flow measurement is enabled.



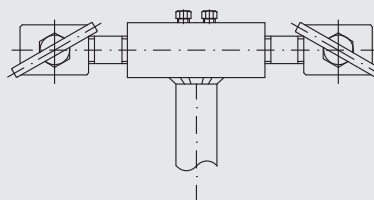
### Vortex shedding frequency

Depending on the internal diameter, the fluid characteristics and the Reynolds number, a vortex will be generated around the pitot tube. If the natural frequency of the pitot coincides with the vortex shedding frequency, an end support can be mounted on the opposite side of the pipe (see page 4). The necessity test is performed during the design phase.

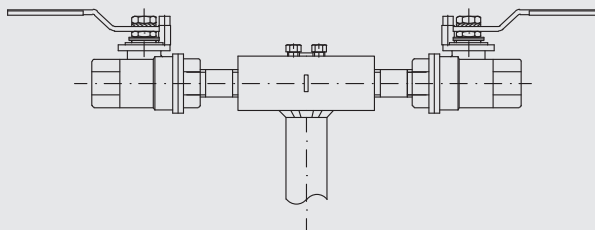
For further details and information, see Technical information IN 00.15 at [www.wika.com](http://www.wika.com)

## Pressure tap

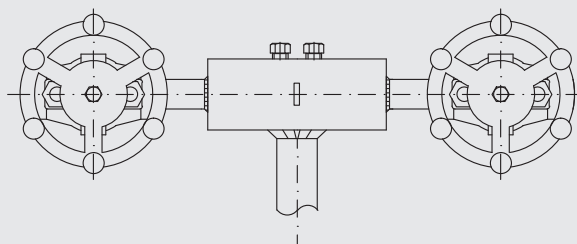
### Needle valves (standard)



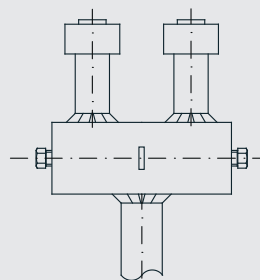
### Ball valves



### Gate valves



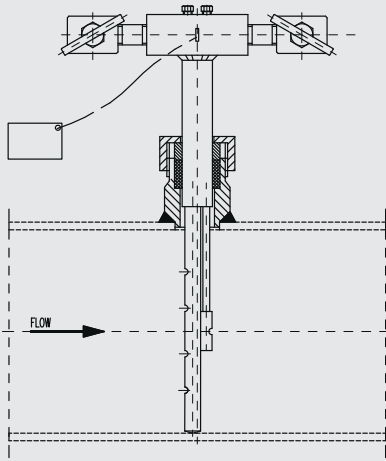
### Flanged, for a direct connection of a differential pressure transmitter



**Available variants**

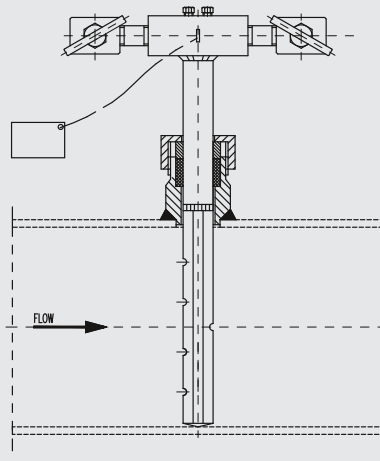
**Series 73**

For small nominal sizes ≤ 5" and low-stress conditions



**Series 75**

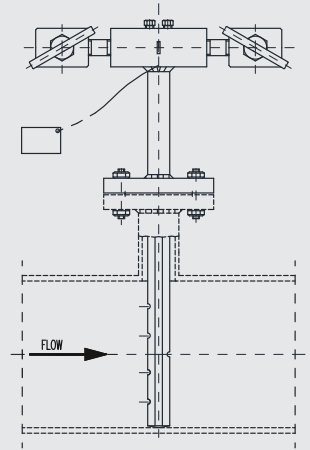
For medium nominal sizes ≤ 42" and medium-stress conditions (obtained from 20 mm square bar)



**Series 78**

For large nominal sizes ≤ 42" and high-stress conditions (obtained from 40 mm square bar)

Not available with compression fitting



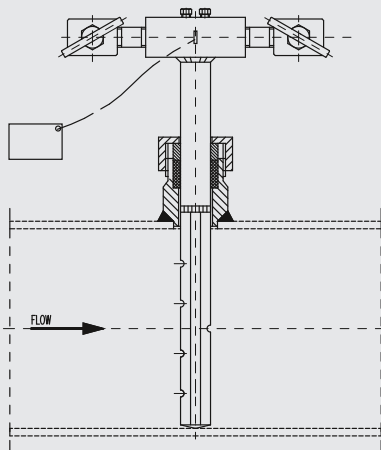
The overview on page 4 will help to select the best suitable version.

**Mounting types**

**Model FLC-APT-F**

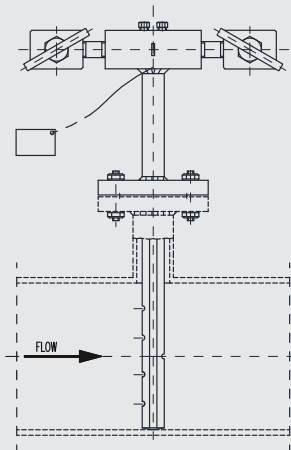
**Compression fitting**

Mounting by means of a sealed gland with ferrule



**Flange version**

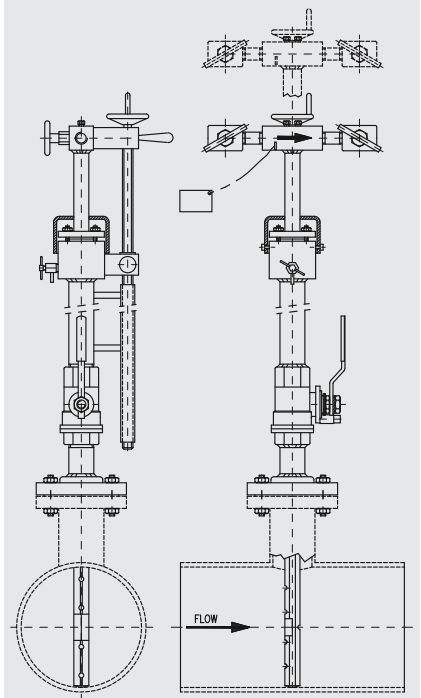
Mounting by means of a flange nozzle



**Model FLC-APT-E**

**Extractable version**

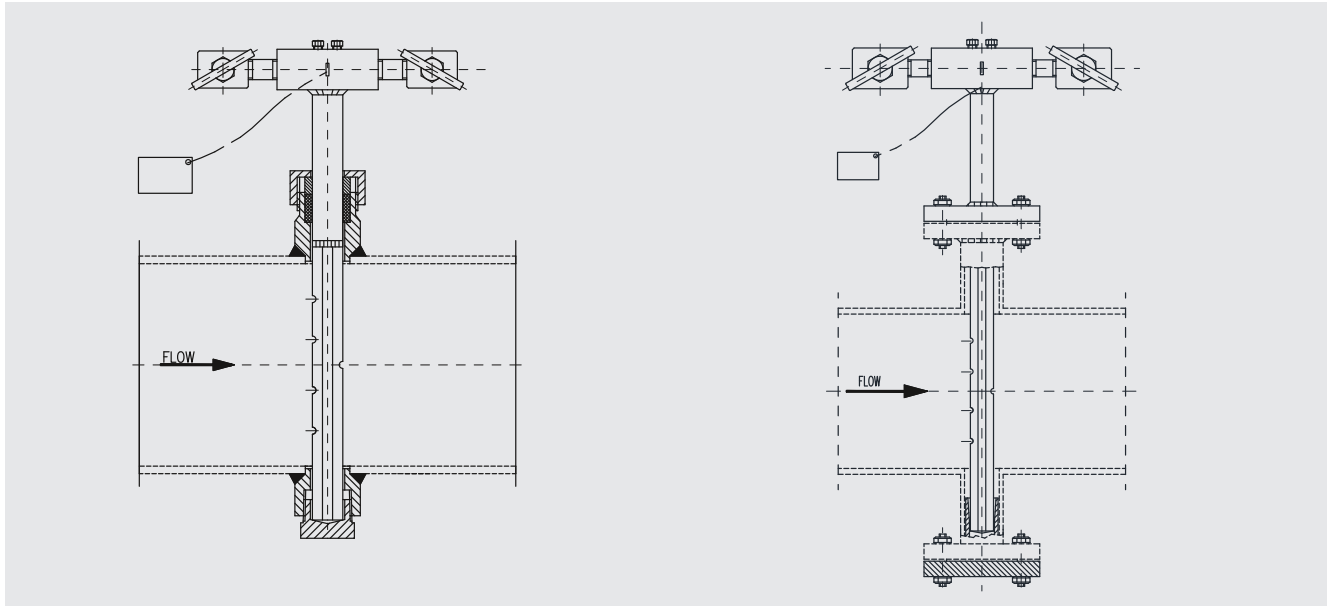
Mounting by means of a flange nozzle, extractable under process conditions



## End support (option)

The choice of the suitable version depends on the vibrations under process conditions.

The end support is not available for series 73.



The following overview will help to select the best suitable version.

## Overview

### Compression fitting

| Series | 73      |         | 75   |         | 78   |  |
|--------|---------|---------|------|---------|------|--|
|        | without | without | with | without | with |  |
| 2"     | ●       |         |      |         |      |  |
| 2 ½"   | ●       |         |      |         |      |  |
| 3"     | ●       |         |      |         |      |  |
| 3 ½"   | ●       |         |      |         |      |  |
| 4"     | ●       | ●       | ●    |         |      |  |
| 5"     | ●       | ●       | ●    |         |      |  |
| 6"     |         | ●       | ●    |         |      |  |
| 8"     |         | ●       | ●    |         |      |  |
| 10"    |         | ●       | ●    |         |      |  |
| 12"    |         | ●       | ●    |         |      |  |
| 14"    |         | ●       | ●    |         |      |  |
| 16"    |         | ●       | ●    |         |      |  |
| 18"    |         | ●       | ●    |         |      |  |
| 20"    |         | ●       | ●    |         |      |  |
| 24"    |         | ●       | ●    |         |      |  |
| 30"    |         | ●       | ●    |         |      |  |
| 36"    |         | ●       | ●    |         |      |  |
| 42"    |         | ●       | ●    |         |      |  |
| 48"    |         |         | ●    |         |      |  |
| 60"    |         |         | ●    |         |      |  |
| 72"    |         |         | ●    |         |      |  |

### Flange version

| Series | 73      |         | 75   |         | 78   |  |
|--------|---------|---------|------|---------|------|--|
|        | without | without | with | without | with |  |
| 2"     |         |         |      |         |      |  |
| 2 ½"   |         |         |      |         |      |  |
| 3"     |         |         |      |         |      |  |
| 3 ½"   | ●       |         |      |         |      |  |
| 4"     | ●       |         |      |         |      |  |
| 5"     | ●       |         |      |         |      |  |
| 6"     |         | ●       | ●    |         |      |  |
| 8"     |         | ●       | ●    |         |      |  |
| 10"    |         | ●       | ●    |         |      |  |
| 12"    |         | ●       | ●    | ●       | ●    |  |
| 14"    |         | ●       | ●    | ●       | ●    |  |
| 16"    |         | ●       | ●    | ●       | ●    |  |
| 18"    |         | ●       | ●    | ●       | ●    |  |
| 20"    |         | ●       | ●    | ●       | ●    |  |
| 24"    |         | ●       | ●    | ●       | ●    |  |
| 30"    |         | ●       | ●    | ●       | ●    |  |
| 36"    |         | ●       | ●    | ●       | ●    |  |
| 42"    |         | ●       | ●    | ●       | ●    |  |
| 48"    |         | ●       | ●    | ●       | ●    |  |
| 60"    |         | ●       | ●    | ●       | ●    |  |
| 72"    |         | ●       | ●    | ●       | ●    |  |

### Extractable version

| Series | 73      |         | 75   |         | 78   |  |
|--------|---------|---------|------|---------|------|--|
|        | without | without | with | without | with |  |
| 2"     |         |         |      |         |      |  |
| 2 ½"   |         |         |      |         |      |  |
| 3"     |         |         |      |         |      |  |
| 3 ½"   |         |         |      |         |      |  |
| 4"     |         | ●       | ●    |         |      |  |
| 5"     |         | ●       | ●    |         |      |  |
| 6"     |         | ●       | ●    |         |      |  |
| 8"     |         | ●       | ●    |         |      |  |
| 10"    |         | ●       | ●    |         |      |  |
| 12"    |         | ●       | ●    | ○       | ○    |  |
| 14"    |         | ●       | ●    | ○       | ○    |  |
| 16"    |         | ●       | ●    | ○       | ○    |  |
| 18"    |         | ●       | ●    | ○       | ○    |  |
| 20"    |         | ●       | ●    | ○       | ○    |  |
| 24"    |         | ●       | ●    | ○       | ○    |  |
| 30"    |         | ●       | ●    | ○       | ○    |  |
| 36"    |         | ●       | ●    | ○       | ○    |  |
| 42"    |         | ●       | ●    | ○       | ○    |  |
| 48"    |         |         |      | ○       | ○    |  |
| 60"    |         |         |      | ○       | ○    |  |
| 72"    |         |         |      |         |      |  |

● possible without limitations  
○ possible for a temperature of max. 200 °C

### **Ordering information**

Model / Nominal size and pipe schedule / Nominal pressure rating / Material / Pressure tap / Mounting type / Available variant / End support

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