

## Advising customers - how to find the appropriate flow sensor 建议客户——如何找到合适的流量传感器

There is a standard way to find an appropriate flow sensor which is suitable for the customer's application.  
有一种标准的方法可以找到适合客户应用的合适的流量传感器

### First step - find a suitable device 第一步- 寻找合适的设备

FlowVision – Product selection 产品选择

purpose 用途	fluid 流体	pipe size 版面尺寸	electrical outputs 电力输出	device 设备	
<b>volume flow measurement</b> mass flow/standard volume flow 体积流量测量	air, nitrogen, oxygen 空气、氮气、氧气	1/2"-2"	4-20 mA pulse output 4-20 mA + pulse output	FC03, FC50-CA...01/02 FC04 FC50-CA...11	
		> 2"	4-20 mA	FC50-CA...00/01/02	
	air, nitrogen, oxygen, argon, carbon dioxide, methane, hydrogen 空气、氮气、氧气、氩气、 二氧化碳、甲烷、氢	1/2"-2"	4-20 mA + pulse output 4-20 mA + pulse output + RS232	FC01-CA with CSP or CST FC100-CA with CSP or CST	
		> 2"	4-20 mA + pulse output 4-20 mA + pulse output + RS232	FC01-CA with CSF or CST FC100-CA with CSF or CST	
	water 水	1/2"-2"	4-20 mA + pulse output 4-20 mA + pulse output + RS232	FC01-LQ with CSP FC100-LQ with CSP	
		> 2"	4-20 mA + pulse output 4-20 mA + pulse output + RS232	FC01-LQ with CSF FC100-LQ with CSF	
	<b>flow speed measurement</b> punctual 流量速度测量 精确的	air or water 空气或水	1/2"-2"	4-20 mA 4-20 mA + pulse output 4-20 mA + pulse output + RS232	FC50...01/02/11 FC01 with CSP or CST FC100 with CSP or CST
			> 2"	4-20 mA 4-20 mA + pulse output 4-20 mA + pulse output + RS232	FC50...00/01/02 FC01 with CSF or CST FC100 with CSF or CST
		gases or liquids 气体或液体	1/2"-2"	4-20 mA + pulse output	FC01-CC with CSP or CST
			> 2"	4-20 mA + pulse output	FC01-CC with CSF or CST
<b>flow monitoring</b> switch point 流量监控 切换点	gases or liquids 气体或液体	1/2"-2"	power FET relay	FS10...01/02/11 SW118 SW119 with MKG	
		> 2"	power FET relay	FS10...01/02 FS20 SW118 SW119 with MKV/MKG	
	gases 气体	> 1/2"	relay	SW112	
	aqueous liquids 水的液体	> 1/2"	power FET	FS30	

Detailed datasheets for all devices: flowvision-grubbe.de

An easy way to find a suitable device is to work with the "Product Selection" flyer, which was also translated to Chinese. You have to start at the left side and find out what the customer needs. For example: 一个简单的方法是使用“产品选择”传单来找到一个合适的设备来，这也被翻译成汉语。你必须从左边开始，找出顾客需要什么。例如：

CFS: "Are you searching for a flow monitor with just a switch point or do you want to measure the flow exactly?" CFS: "你是在寻找一个只有一个开关点的流量监视器，还是想精确测量流量?"

Customer: "I want to measure the flow. We plan to measure the consumption of compressed air in our factory." 顾客: "我想量一下流量。我们计划测量我们工厂压缩空气的消耗量。"

朝瑞: "Okay, then you want to measure volume flow of compressed air. What is the pipe size at the measuring point?" CFS: "好的，然后你想测量压缩空气的体积流量。测量点的管道尺寸是多少?"

Customer: "Pipe size is 100 mm." 顾客: "管子的尺寸是100mm。"

朝瑞: "Okay. What output signal do you need? 4- 20 mA, pulse output?"

朝瑞: "好吧。你需要什么输出信号?4- 20 mA, 脉冲输出?"

Customer: "We need a pulse output. We will count the pulses in our PLC." 顾客: "我们需要脉冲输出。我们将在我们的PLC中计算脉冲。"

朝瑞: "Okay, in this case we have a very interesting device for you. It is the FC100-CA." (FC01-CA is also possible. FC100... is the successor of the FC01..., so I recommend to offer FC100...)

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"好的，在这种情况下，我们有一个非常有趣的设备给你，FC100-CA。" (FC01 - CA也是可能的。FC100...的继任者FC01...,所以我建议提供FC100...)

## Second step – find the suitable version of the device

### 第二步-找到合适的版本设备

All FlowVision sensors are available in many different versions. You have to work with the datasheets to find the best version for the customer's demand. In this case you have to work with the FC100-CA datasheet. The datasheet has 15 pages. At the first page you find the electronic control unit and an ordering information in the bottom left corner. Here you can select between different housings, outputs etc.

所有的流量传感器都有许多不同的版本。你必须查验数据表，才能找到最适合顾客需求的版本。在这种情况下，您必须使用FC100 - CA数据表。数据表有15页，在第一页，你可以找到电子控制单元和在左下角的订购信息，在这里你可以选择不同的外壳，输出等等。



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Flow Meter **FC100-CA** (compressed air/gases)



**Description**

Microcontroller operated Flow Meter for gases such as air, compressed air, oxygen, nitrogen, argon, carbon dioxide, methane/natural gas and hydrogen. The FC100-CA is particularly suited to consumption measurement and leakage detection in compressed air systems. It is suitable for use with calorimetric monitoring heads.

Please note for use with carbon dioxide and argon that measurement is only possible with adapters TP-01 through TP-04.

The RS232 interface allows configuration, operation and data logging by means of a PC software.



**FC100-CA**  
rail-mounted version      surface mounted version

**Features**

- \* Menu driven (keypads)
- \* LC display (2 x 16 digits) can show:
  - actual operating flow velocity/standard flow velocity, operating volume flow/standard volume flow, mass flow, medium temperature;
  - directions for parameter assignment, configuration, diagnostics and error correction;
  - peak value indication
  - display illumination
- \* Two scalable analogue outputs
- \* Minimum/maximum memory of flow velocity and temperature
- \* Two freely selectable limit contacts
- \* Volume- or mass flow dependent pulse output
- \* Totalizer (with external reset), power fail-safe
- \* RS232 interface allows configuration, operation and data logging by means of a PC software

**Dimensions**

FC100-CA (rail-mounted version)



FC100-FH-CA (surface mounted version)



This is a metric design and millimeter dimensions take precedence (  $\frac{mm}{inch}$  )

A

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

**Ordering information**

Type	
<b>FC100-CA</b>	Flow Meter with software for mass measurement of gases, rail mounted
<b>FC100-FH-CA</b>	Flow Meter with software for mass measurement of gases, surface mounted
<b>Input voltage</b>	
U1	DC 10 ... 40 V
<b>Signal outputs</b>	
R2	2 relay outputs (2 limit values)
T4	4 transistor outputs (2 limit values + 2 status or 2 limit values + 1 status + 1 pulse output)
<b>Analogue outputs</b>	
V1	0/1-5 Volt
V2	0/2-10 Volt
C1	0/4-20 mA (self-powered, galvanically isolated)
<b>Serial Interface</b>	
K1	RS232 (with PC-Software)

FC100-CA - U1 R2 V1 K1 ordering example

But of course you know that a FC100-CA measuring system always consists of three parts: An electronic control unit, a sensor and a cable between sensor and electronic control unit. Next week you'll get an introduction of how to choose the suitable sensor and cable.

但是当然你知道FC100 - CA测量系统总是由三个部分组成:电子控制单元，传感器和传感器和电子控制单元之间的电缆。下章节你将会知道如何选择合适的传感器和电缆。