FLC-E

- 电磁流量传感器内藏式流量控制器。
- 采用步进马达，信赖性、耐久性优秀。
- PID控制及独立的针阀构造形成了高应答性（约8秒）、高稳定性。
- 减少维护及垃圾堵塞问题。
- 丰富的输入输出性能。

- A water flow controller with internal flowsensor and yet offering at low price.
- Employing a stepping motor increases a reliability and durability.
- PID control and its own valve structures make highly response (Approx 8 sec) and stability important.
- It cuts down a maintenance and trouble by a clogging since it is built in electromagnetic flow meter.
- An abundant input/output functions.

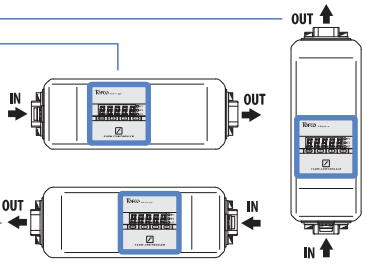
型式 Type selection

请填写型号栏并按原样传真！我们将接受您的报价和订单。

	规格 Std.		流体名 Fluids	流量单位 Units	最大流量 Max flow	连接口径 Connection size	输入输出 In/Output	显示方向 Indicator direction	特殊项目 For specialized item
FLC-E	□	- 0	□	- □	□	- □	- □	- □	-

显示方向 Indicator direction

U	竖 Vertical
R	右 Right
L	左 Left



输入输出 In/Output

A	4-20mA
V	0-5V
N	1-5V

连接口径 Connection size

01	Rc1/4"
02	Rc3/8"
03	Rc1/2"
04	Rc3/4"
05	Rc1"

最大流量 Max flow

Max.	下记测定范围的最大流量记入 Max. flow rate selected from the available flow range below

流量单位 Units

B	L/min
Z	特殊 For specialized unit ＊1

流体名 Fluids

1	水
9	特殊 For specialized fluid ＊1

规格 Std.

	控制流量范围 Control Flow range	连接口径 Connection size
010	0.5～5L/min	Rc 1/4", Rc 3/8", Rc 1/2"
	1～10L/min	Rc 3/8", Rc 1/2"
	2～20L/min	Rc 1/2"
020	5～50L/min	Rc 3/4", Rc 1"
	10～100L/min	Rc1"

＊1: 特殊项目请在型号末尾按顺序表明。详细信息请咨询我司。

＊1:For specialized items specify them at end of Type selection in order. For details, consult us with your specification.

独特的功能 Typical functions so many

电磁流量传感器内藏式控制器 Build in electromagnetic flow meter

由于它内置在电磁流量计中，因此减少了因堵塞引起的维护和故障与涡轮和涡流类型相比。也可以用压缩空气来清扫内部。

It cuts down a maintenance and trouble by a clogging since it is built in electromagnetic flow meter compared with a turbine and vortex type. Air purge is also possible.

流量设定的各马达功能 Each mode function to set flowrate

1. 通过参数模式设定流量
控制在显示屏上输入的流量值的目标。

2. 根据外部模拟输入模式设定流量
可通过外部模拟输入改变设定流量，并可从外部进行远程控制。

3. 根据预设模式设定流量
通过连接 3 个端子，可以轻松切换多达 4 种类型的预设流量。

1. For setting flowrate by parameter mode
(It controls over targeting the flowrate values entered on the display screen)
2. For setting flowrate by external analog input mode
It is possible to change the flow rate remotely by the analog signal.
3. For setting flowrate by preset mode
(Easy switching can be made for four kinds of setting flowrates where have been preset in terms of the connecting method of three pieces of terminals.)

警报接点功能 Alarm contact function

以预先设定好的值(2点)为基准，通过继电器接点可进行ON/OFF。

Based upon the prior setting values(2 points), it can be turned ON/OFF by relay contact.

模拟输出功能 Analog output function

模拟信号输出与流量成比例，通过此可监视外部流量，有利于提高设备合格率、查明不良原因。

By using analog output signal proportional to flowrates, the flowrate can be externally monitored, and not only improves it the yield of production, but contributing to search for a cause of failure.

阀门不感区功能 Function of valve dead zone

不仅带有停止阀门运作的功能，还十分有利于提高阀门的耐久性及节省能源。此外，盲区的范围也可任意调节。

It functions not to make the valve move more than necessary. The functions contribute to improve a valve durability and to save power. In addition the range of the dead zone is adjustable arbitrarily.

控制的ON/OFF功能 Control ON/OFF

可以通过预置端子开/关控制。与电磁阀组合重复流量控制和阀门停止可实现快速响应时间。增加控制阀的耐用性也是有效的。

It is possible to on/off the control by preset terminal. Quick responsetime is possible repeating a flow control and valve stop combining with the solenoid valve. It is also effective to increase the durability of the control valve.

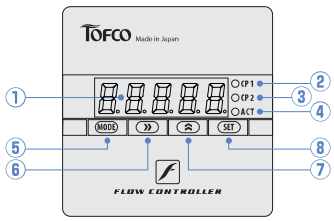
规格 Specifications

项目 Item		FLC-E010			FLC-E020	
控制流量范围 Flow rate(controllable)		0.5～5L/min	1～10L/min	2～20L/min	5～50L/min	10～100L/min
节流孔 Orifice		φ3.0	φ4.5	φ6.0	φ12.0	φ13.5
流体 Fluid		水，其他的冷却水等（导电率50μs/cm 以上的液体）WATER, Other coolants(Conductivity should be more than 50μs/cm)				
流量精度(电磁流量计单体) Flow Accuracy(Electromagnetic flowmeter only)		±2% of F.S.		±3% of F.S.	±2% of F.S.	±3% of F.S.
流量控制精度 Flow Control Accuracy		±5% of F.S. F.S.±5%				
控制压力范围 Operating Pressure		0.15～0.4MPa(G), 耐压：0.5MPa(G), 必要压差：0.15MPa 0.15～0.4MPa(G), Max.0.5MPa(G), Required differential pressure : 0.15MPa				
针阀反应时间 Response Time		约 8 秒 Approx. 8 sec				
使用温度范围 Operating Temp. 使用环境温度 Ambient Temp.		0～60℃(耐热：80℃) 无结露及结冰。0～60℃(Max.：80℃) Non freezing and dewing 0～50℃ 无结露及结冰Non freezing and dewing				
输入 Input	模拟输入 Analog Input	设定流量值输入：可从外部对设定流量进行远程操作Input of the setting value of the flow : The setting flowrate can be remote-controlled from outside 4-20mA（输入阻抗：20Ω）4-20mA （Impedance : 20Ω） 0-5V/1-5V（输入阻抗：1MΩ）0-5V/1-5V （Impedance : 1MΩ）				
	预设输入 Preset Input	设定流量值输入：可通过ON/OFF预设端子来改变设定流量 Switchable the flow rate by three terminal combination 设定流量值1点+3点(最大4点的设定流量) 1point set flow by monitor＋3points preliminary set flow (Max. 4points) 控制开始/停止输入：开始控制/为防止停止引起阀门动作浪费，可将设定流量值更改为2点 Starting control/stopping input : Protecting from useless behavior of the valve by using the starting/stopping control and the change of the setting values of the flowrates can be made in two points. 开始控制/停止+设定流量值2点 Starting/stopping control ＋2 points of the setting value of the flowrate				
输出 Output	模拟输出(1 点) *1 Analog Output(1 point)	测定流量值：4–20mA（负载电阻300Ω以下）4-20mA （Load Resistance : Less than 300Ω以下） 0-5V/1-5V（负载电阻1MΩ以上）50-5V/1-5V （Load Resistance : More than 1MΩ）				
	警报输出 Alarm Output	继电器输出：2点（上上限, 上下限, 下下限）DC35V, 0.1A Max. Relay Output : 2points （Hi/Hi, Hi/Low, Low/Low） DC35V, 0.1A Max.				
完全关闭功能 Full Close Function		设定流量0L/min 时、将阀门完全关闭。Close the valve at the set flow of 0L/min. ※				
显示 Display		瞬间流量显示/设定流量显示 Instantaneous flow rate/set flow rate				
电源 Power		DC24V±10%, Max.450mA（待机时：约100mA Standby : Approx.100mA）				
电缆 Cable		标准型：2m Standard : 2m long				
液体接触部材料 Wetted Part		SCS13, SUS304, SUS316L, PPS, PTFE（包括填充材料Include stopper), FKM, HNBR				
重量 Weight	阀门部 Main body	约１８００g Approx.1800g			约２４００g Approx.2400g	
	电缆Cable	约１５０g Approx.150g				

*1：模拟输出为流量与比例的输出。 例)：4mA：0L/min(可另进行设定),20mA：Max.流量(但是、测定范围内保证精度。)
※阀门完全关闭下不能保证完全止水。

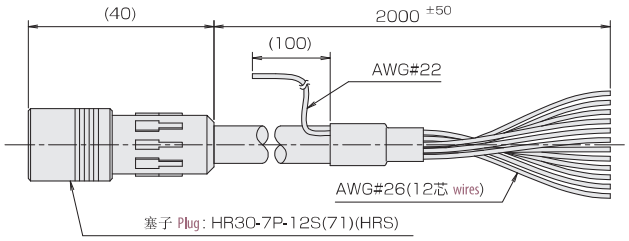
*1: Analog output is the one proportional to the flowrate. For example) 4mA : 0L/min(Can be set separately), 20mA : Max flowrate (However accuracy warranty shall be within the measuring ranges.)
※Shut off will not be guaranteed.

控制部及操作键 Explanation of the Controller section and operation keys



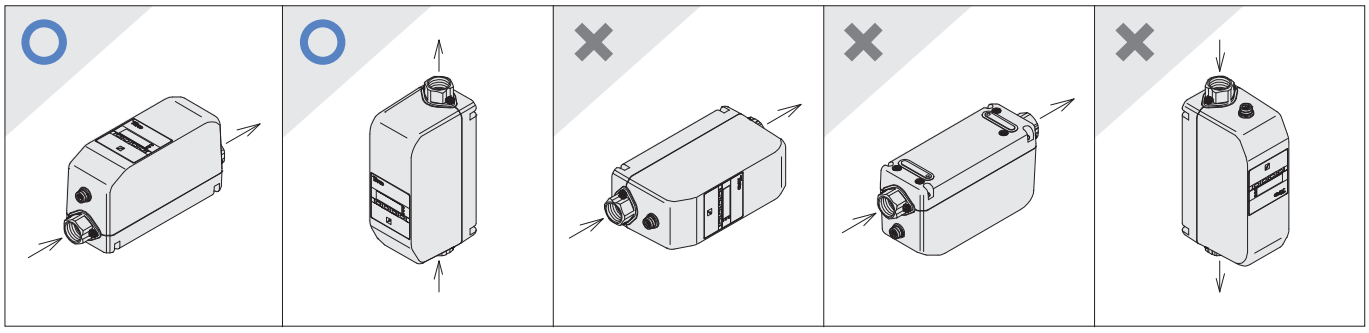
① **测定值显示部**	测定值(瞬间值)/设定菜单·设定参数/错误信息等。
② **CP1灯**	当比较输出ON时，LED点亮。
③ **CP2灯**	当比较输出ON时，LED点亮。
④ **ACT灯**	它通过 LED 灯的间隔指示流量传感器的检测状态。
⑤ **Mode键**	移动到测量模式到设置模式，并切换到设置模式内的每个模式。
⑥ **Shift键**	更改数字。
⑦ **UP键**	更改数值。
⑧ **SET键**	在设置模式内切换设置项目。
① **Indicator**	Indicate Measurement value(Instantaneous)/Set Menu · Set Parameter/Error Message, etc
② **CP1 Lamp**	LED lights on when comparison output is on.
③ **CP2 Lamp**	LED lights on when comparison output is on.
④ **ACT Lamp**	It indicates a detection status of the flow sensor by the interval of LED light
⑤ **Mode Key**	Move to the measurement mode to the set mode and switch to each mode inside of the set mode.
⑥ **Shift Key**	Change the digit.
⑦ **Up Key**	Change the value.
⑧ **Set Key**	Switch the set item inside of the set mode

附属线缆 Standard attached cable



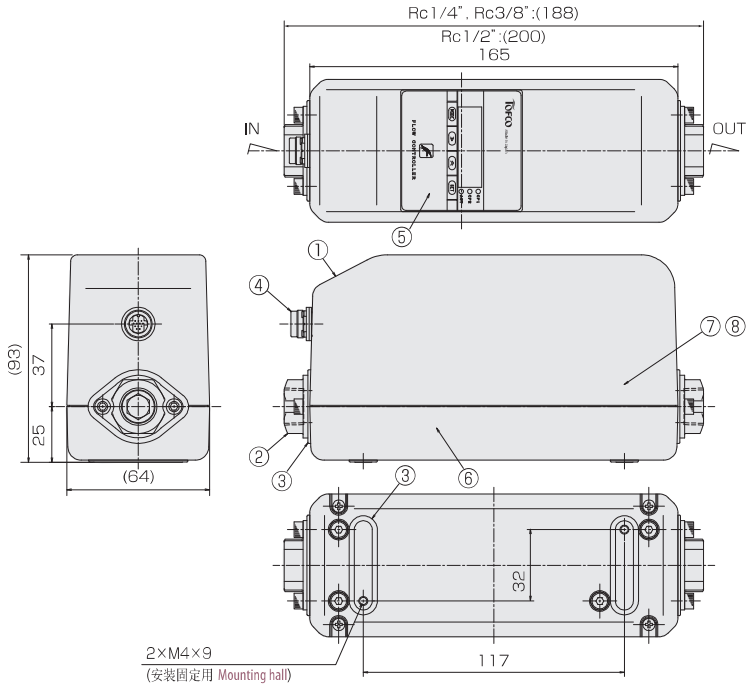
线色 Cable colors	内容 Function
黑 Black	电源 DC 0V Power DC 0V
红（朱） Red	电源 DC24V Power DC24V
橙 Orange	模拟输出 OUT Analog Output OUT
绿 Green	模拟输出 COM Analog Output COM
黄 Yellow	预设 1 Preset 1
灰 Gray	预设 COM Preset COM
紫 Purple	预设 2 Preset 2
粉 Peach	警报接点 CP1 Alarm Contact CP1
白 White	警报接点 COM Alarm Contact COM
紫红 Magenta	警报接点CP2 Alarm Contact CP2
褐 Brown	模拟输入 IN(输入 Hi) Analog Input IN(Input Hi)
蓝 Blue	模拟输入 COM Analog Input COM

安装方向 Installation attitude

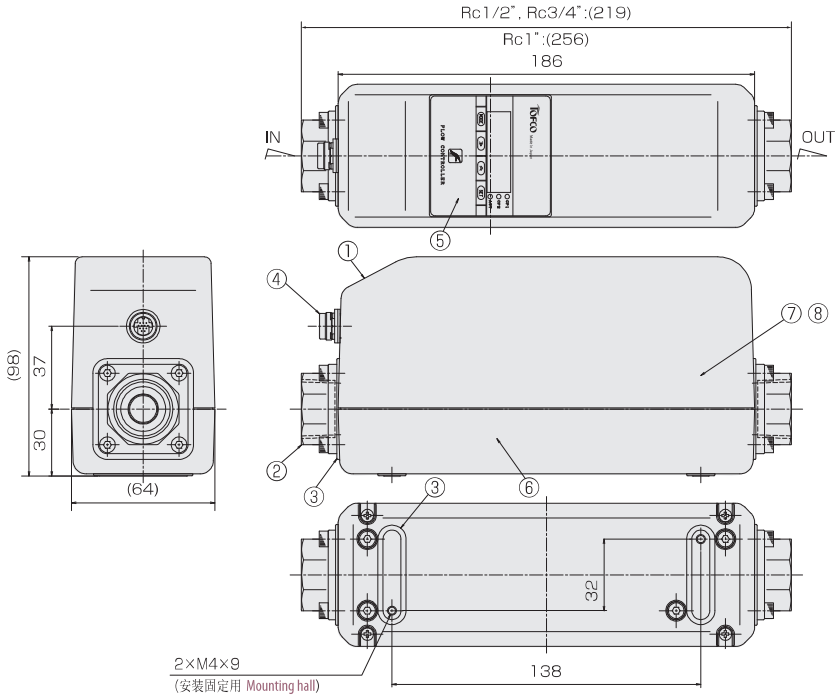


结构图 Structural drawing

FLC-E010



FLC-E020



材质 Materials

	名称 Names of parts	材质 Material	备注 Remarks
1	罩壳 Cover	ZDC2	酒红色金属 Wine red metallic
2	适配器 Adaptor	SCS13	SUS304相当 Equivalent
3	防滴漏 Drip-proof	NBR	
4	防水连接器 Water-proof Connector	PPS 等 etc.	
5	控制器 Controller	PC 等 etc.	
6	电磁流量计 Electromagnetic Flow Meter	PPS 等 etc.	
7	步进马达 Stepping Motor	POM 等 etc.	
8	球状阀 Ball Valve	SCS13 等 etc.	SUS304相当等 Equivalent, etc.

面板图 Panel cut-out