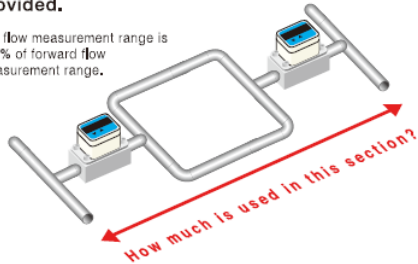




Reverse flow detection function

Useful for loop piping. Reverse flow detection and forward-reverse flow integration functions are provided.

Reverse flow measurement range is up to 30% of forward flow rate measurement range.



Model lineup meets a variety of application requirements

For ease of use and ease of selection, models in a broad range from small to large are available.



Pipe size: 8/15/25/40/50A
Range: 200/500/1000/3000
/6000/12000 L/min

Easy maintenance without removal from the piping

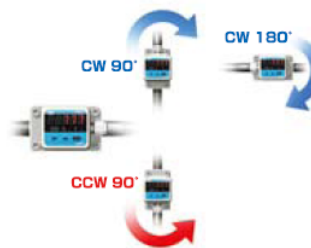
The measurement unit can be dismantled and replaced for easy maintenance at the application site without disconnecting the pipes.

(Pipe sizes 25/40/50A only)



Use a single MCF for flow in various directions

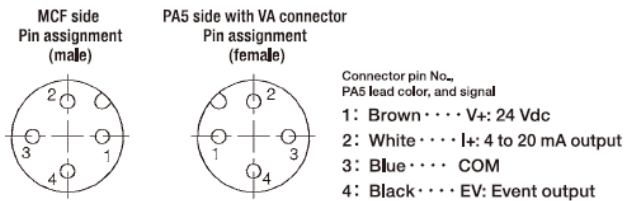
The display unit can rotate more than 90° counterclockwise and more than 180° clockwise.



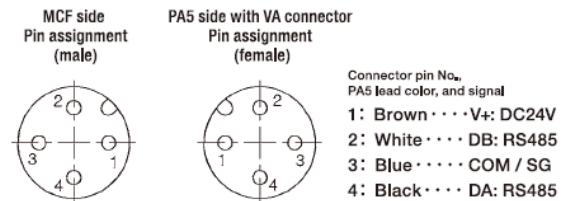
Model No.	MCF0080	MCF0150	MCF0151	MCF0250	MCF0400	MCF0500
Gas types	Air/nitrogen. (Note that gas must be dry, without corrosive components such as chlorine, sulfur and acid. It must also be clean, without dust or oil mist.)					
Flow rate range [L/min(normal)] *1	0 to 200	0 to 500	0 to 1000	0 to 3000	0 to 6000	0 to 12000
Reverse flow range [L/min(normal)] *2	-60	-150	-300	-900	-1800	-3600
Extended range [L/min(normal)] *3	400	1000	2000	6000	12000	24000
Accuracy guaranteed flow rate range [L/min(normal)]	4 to 200	10 to 500	20 to 1000	60 to 3000	120 to 6000	240 to 12000
Measurement accuracy	± 3% FS					
Smallest detectable flow rate [L/min(normal)]	2	5	10	30	60	120
Display resolution [L/min(normal)]	1	1	2	5	10	10
Temperature	-10 to +60 °C (without freezing)					
Storage temperature	-20 to +70 °C (without freezing)					
Humidity	0 to 90 % RH (without condensation)					
Pipe size	8A(1/4B)	15A(1/2B)	15A(1/2B)	25A(1B)	40A(1 1/2B)	50A(2B)
Connection type	MCF□□□□R: Rc thread			MCF□□□□G: G thread		
Body material	Aluminum alloy					
O-ring material	MCF□□□□A: H-NBR			MCF□□□□F: FKM		
Case material	Denatured PPO					
Operating pressure range	-0.07 to +1.0 MPa					
Pressure resistance	1.5 MPa					
Mounting orientation	· Horizontal (flow: left → right, right → left) · Vertical (flow: up → down, down → up)					
Rated voltage	24V DC, 120 mA max.					
Sampling cycle/ response time	50 ms to 1.5 s max. (time for 95 % of response to 0 → 100 % FS step input)					
Output signal (*001: 4-20 mA model only) *4	4 to 20 mA, allowable load resistance 300 Ω max.					
Event output (*001: RS-485 communication model only) *4	One open collector output (rating 30V DC, 50 mA), with output type selectable from event function.					
Event function(*001: RS-485 communication model only) *4	Selectable from pulse output for integration *4, instantaneous flow rate high/low limit alarm, integration count up/down, or alarm output.					
Communications	RS-485 Communications (3-wire system), MODBUS Protocol Transmission speed 19200 bps max.					
Electrical connection	PA5 Series VA connector (4 pins)					
Display	7-segment, 5-digit display changeable between instantaneous flow rate, integrated (cumulative) flow, and cost.					
Protective structure	IP65. (Rating is based on JIS C 0920 and IEC529. For purposes of installation indoors, device is waterproof and dustproof.)					
Standards compliance	CE marked : EN61326-2-3 : 2006					
Weight	400 g	400 g	400 g	500 g	700 g	1100 g

Wiring pin assignment

(1) MCF□□□□□□□□ND01□□□□□□
4-20mA, open collector output

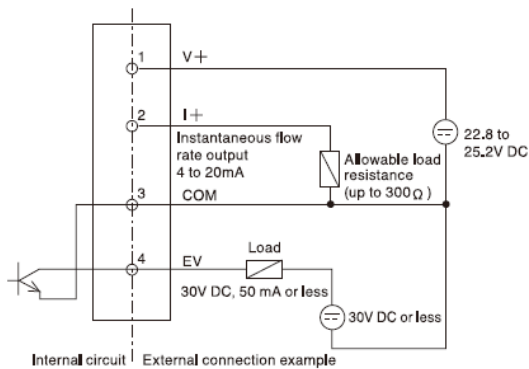


(2) MCF□□□□□□□□ND10□□□□□□
(RS-485)

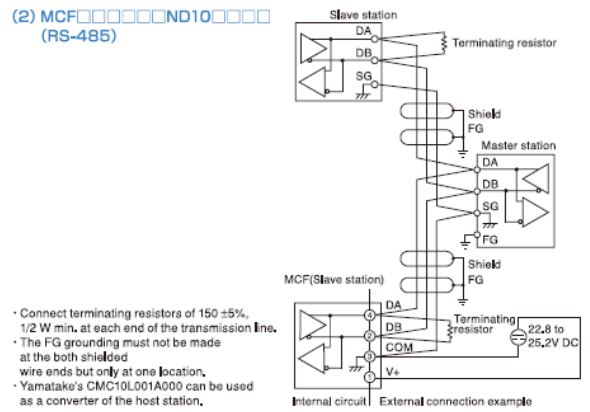


Wiring example

(1) MCF□□□□□□□□ND01□□□□□□
4-20mA, open collector output



(2) MCF□□□□□□□□ND10□□□□□□
(RS-485)



Accuracy and straight pipe length

<Connection with different size piping, valve or filter>

• Install straight pipes as needed with the lengths given in the table below. If a device that is not listed in the table is installed either upstream or downstream, contact Yamatake for the length of the straight pipe section. If reverse flow is also expected, it is necessary to have the same length of straight pipe downstream as upstream.

Pipe or connected device	Location in relation to the MCF	Straight pipe section for this device	
		For accuracy within product specification range ($\pm 3\%$ FS)	For accuracy of $\pm 5\%$ FS
MFF25S mist separator for MCF0080/0150/0151/0250 *2	Upstream	10D	(Not required)
MFF25L mist separator for MCF0400/0500 *2	Upstream	20D	(Not required)
Pipe one size larger in dia. (connected with reducer)	Upstream	5D	(Not required)
MCF0080 3/8B → 1/4B	Downstream	(Not required)	(Not required)
MCF0150/0151 3/4B → 1/2B			
MCF0250 1 1/4B → 1B			
MCF0400 2B → 1 1/2B			
Pipe one size larger in dia. (connected with reducer)	Upstream	10D	5D
MCF0500 2 1/2B → 2B	Downstream	5D	5D
Pipe more than one size smaller in dia. (connected with enlarging pipe)	Upstream	20D	5D
MCF0080 1/8B → 1/4B	Downstream	(Not required)	(Not required)
MCF0150 / 0151 3/8B → 1/2B			
MCF0250 3/4B → 1B			
MCF0400 1 1/4B → 1 1/2B			

Pipe or connected device	Location in relation to the MCF	Straight pipe section for this device	
		For accuracy within product specification range ($\pm 3\%$ FS)	For accuracy of $\pm 5\%$ FS
Pipe more than one size smaller in dia. (connected with enlarging pipe)	Upstream	25D	10D
	Downstream	5D	5D
MCF0500 1 1/2B → 2B	Upstream	10D	(Not required)
	Downstream	(Not required)	(Not required)
Double elbow	Upstream	10D	10D
	Downstream	(Not required)	(Not required)
Ball valve (full-bore type full open)	Upstream	(Not required)	(Not required)
	Downstream	(Not required)	(Not required)
Regulator for MCF0080	Upstream	200D	(Not required)
	Downstream	10D	(Not required)
Regulator for MCF0150/0151/0250/0400/0500	Upstream	30D	(Not required)
	Downstream	5D	(Not required)
Air filter	Upstream	25D	(Not required)