HORIBAPrecision Instruments





Mounting orientation free / High accuracy and fast response/ Auto zero

Full scale flow rate

(10,20,30,50,100,200,300,500) mL/min te (1,2,3,5,10,20,30,50) L/min (100, 150, 200, 300, 400, 500) L/min

About Our Company

HORIBA is a long established and reliable provider of high end analytical and control solutions.

The HORIBA Group of worldwide companies provides an extensive array of instruments and systems for applications ranging from automotive R&D, process and environmental monitoring, in-vitro medical diagnostics, semiconductor manufacturing and metrology to a broad range of scientific R&D and QC measurements. Proven quality and trustworthy performance have established widespread confidence in the HORIBA brand.

HORIBA has many branches worldwide offering support to our customers when and wherever they need it. Most of HORIBA's support centers have clean rooms, which is something HORIBA is proud of. With our global network HORIBA is able to offer a fast and tailored aftercare service for all our customers whenever they need it and in an appropriate environment. Take a look at our Global Support Network pages to see where our support centers are.



HORIBA Precision Instruments

HORIBA Precision Instruments is a subsidiary of HORIBA STEC, established in Beijing China in January 2011. HORIBA Precision Instruments develop and manufacture Mass Flow Controller.

HORIBA STEC

HORIBA STEC renowned in the semiconductor industry. Setting the global standard for semiconductor, offers a wide range of products to suit a variety of different industries.



What's Mass Flow Controller?

A mass flow controller automatically controls the flow rate of gas according to a set flow rate sent as an electric signal, without being affected by use conditions or changes in gas pressure. Flow rates can be roughly classified into two types : volumetric flow and mass flow. A volumetric flow measurement is affected by ambient temperature and pressure. To see the true flow, the pressure and temperature conditions need to be measured and include in a calculation. Mass flow, on the other hand, measures the mass of a fluid so is influenced much less by temperature and pressure conditions, therefore providing much more accurate and stable flow measurement and control. Our mass flow controllers are used in a wide range of industrial fields as indispensable equipment when accurate control of flow rates is required or an automated production line is built.

Structure



Operating principles

at the set flow rate.





- 1. The gas, which enters from the inlet, first splits to flow past the sensor or through the bypass.
- At the senor, the mass flow rate is detected as a proportional change in temperature and converted by the bridge circuits to an electrical signal.
- 3. This signal passes through the amplification and correction circuits, and is output as a linear voltage between 0 to 5V. At the same time, it is also sent to the comparison control circuits.
- 4. The comparison control circuit compares the flow rate setting signal and and the actual flow rate setting signal from the sensor and sends a difference signal to the valve driving circuit.5. The flow rate control valve moves as appropriate to make the difference between the reguired flow set point and flow output signals approach zero. In other words, the unit controls the flow so that it is always

Product Features

S48 series are hybrid Mass Flow Controller of HORIBA STEC (Japan) technology and HORIBA Precision Instruments (China) production. The S48 Mass Flow Controller adopts HORIBA STEC (Japan) technology and is manufactured by HORIBA Precision Instruments (China). These MFC follow fluid technology and quality that HORIBA STEC has developed for half century, which are able to support full customer satisfaction and reliability in a wide range of industries.

Mounting orientation free

Can be installed at any angle, the flow rate of S48 analog series products chan ges little, breaking the traditional MFC installation conditions and giving users convenience.

High accuracy and fast response

S48 analog series products use advanced multi-segment linear adjustment technology, make the flow control accuracy higher and turndown ratio better. Response time less than 2s improving the level and accuracy of users' process and experiment.

Auto zero

Zero point of MFC (MFM) may change, due to the changes of environments and prolonged use. In order to get higher flow control accuracy, the zero point should be corrected. S48 analog series has automatic zero adjustment function.

Product Application



- Solar: precisely controlling gas flow during gas deposition / diffusion / crystal growth and other processes.
- Vacuum coating: process control for thin film deposition.
- Enviroment monitoring: : dynamic dilution / PM2. 5 particulate matter monitoring / VOCs



- Fiber: MCVD/VAD/OVD
- Analytical instruments: gas flow rate control during gas combustion, carrying and sampling.
- Furnace: flame/burner control/gas mixing and blending.



The response time of the S48-BR/BM/CR/CM series is less than 1 second and the S48-DR series is less than 2 seconds.







Performance Data

Series	S48				
Model	BR111 / BM111 BR121 / BM121		BR211 / BM211 BR221 / BM221		
Full-scale of flow rate	10SCCM ≤ x ≤ 5SLM	5SLM < x	≤ 30SLM	30SLM < x ≤ 50SLM	
Valve model		Ν	С		
Flow rate control range		2~100	% of F.S.		
Response		≦1.0s	ec(T98)		
Accuracy		±1.04	%F.S.		
Linearity		±0.5°	%F.S.		
Repeatability		±0.20	%F.S.		
Operating differential pressure	50~300kPa(D)	100~30	0kPa(D)	150~300kPa(D)	
Max. operating pressure	300kPa(G)				
Pressure resistance	1MPa(G)				
Operating temperature	5~50°C (recommended temperature range: 15~35°C)				
External leak rate	BR: 1×10 ⁻¹⁰ Pa•m ³ /s (He) or less BM: 1×10 ⁻¹¹ Pa•m ³ /s (He) or less				
Flow rate setting signal	Bx111: 0.1~5VDC (2~100% F.S.) Bx121: 4.32~20mA, 0.1~5VDC, 1.08~5VDC or 0	0.2∼10VDC (2∼100% F.S.)	Bx211 : 0.1~5VDC (2~ Bx221 : 4.32~20mA, 0.4	~100% F.S.) 1 ~5VDC, 1.08~5VDC or 0.2~10VDC (2~100% F.S.)	
Flow rate output signal	Bx111 : 0 \sim 5VDC (0 \sim 100% F.S.) Bx121 : 4 \sim 20mA, 0 \sim 5VDC, 1 \sim 5VDC or 0 \sim 10VDC (0 \sim 100% F.S.)		Bx211 : 0~5VDC (0~100% F.S.) Bx221 : 4~20mA, 0~5VDC, 1~5VDC or 0~10VDC (0~100% F.S.)		
Power supply	Bx111:+15VDC±5% 140mA, -15VDC±5% 140mA Bx121:13~32VDC, 4.2VA		Bx211 : +15VDC±5% 140mA, -15VDC±5% 140mA Bx221 : 13~32VDC, 4.2VA		
Electrical connector	DB15Pin		DB9Pin		
Wetted materials	BR: SUS316L, PTFE, Magnetic stainless steel, Fluoro rubber BM: SUS316L, PTFE, Magnetic stainless steel				
Fittings	1/4inch SWL equivalent: 127mm; 1/4inch VCR equivalent: 124mm				

NodelCR111/CM111 CR121/CM121CR211/CM21 CR221/CM221Fulde100SLM200SLM200SLMValve model2<100V/21200SLMResponse62<10V/211Accuracy6111Accuracy100~300Pa(D)150·2V/21200~300Pa(D)1Accuracy100~300Pa(D)150·2V/21200~300Pa(D)1Accuracy100~300Pa(D)150·2V/21200~300Pa(D)1Accuracy100~300Pa(D)150·2V/21200~300Pa(D)1Accuracy100~300Pa(D)150·2V/21200~300Pa(D)1Accuracy100~300Pa(D)150·2V/21200~300Pa(D)1Accuracy100~300Pa(D)150·2V/21200~300Pa(D)1Pressure resistance100~300Pa(D)150·2V/21200~300Pa(D)1Acturational pressure100~300Pa(D)150·2V/21200~300Pa(D)1Flore acturational pressure100~300Pa(D)150·2V/21200~300Pa(D)1Acturational pressure100~300Pa(D)150·2V/21200~300Pa(D)1Flore acturational pressure100~300Pa(D)150·2V/21200~300Pa(D)1Acturational pressure100~300Pa(D)150·2V/21200~300Pa(D)1Acturational pressure100~300Pa(D)150·2V/21200~300Pa(D)1Acturational pressure100~300Pa(D)100·2V/21200~300Pa(D)1Acturational pressure100~300Pa(D)100·2V/21200~300Pa(D)1Actu	Series	S48						
Full-scale of flow rate100SLM100SLM200SLMValve model $$	Model	CR111/CM111 CR121/CM121		CR211/CM211 CR221/CM221				
Value modelNCFlow rate control range $- 2 - 100^{\circ}$ of F.S.Response $- 2 - 100^{\circ}$ of F.S.Accuracy $- 10 - 2 - 10^{\circ}$ F.S.Linearity $- 10 - 300^{\circ}$ RAGOperating differnitial pressure $100^{\circ} - 300^{\circ}$ RAGOperating differnitial pressure $- 100^{\circ} - 300^{\circ}$ RAGFlow rate output signal $C111^{\circ} - 10^{\circ} - 500^{\circ} - 10^{\circ}$ RAGCharting trade autput signal $C111^{\circ} + 10^{\circ} - 500^{\circ} - 100^{\circ}$ RAGCharting trade autput signal $C111^{\circ} + 10^{\circ} - 100^{\circ} - 100^{\circ}$ RAGPower supply $C111^{\circ} + 10^{\circ} - 100^{\circ} - 1$	Full-scale of flow rate	100SLM	150	SLM	200SLM			
Flow rate control range $2 - 100 \times 15.$ Response $4.0 \times 1.0 \times 10.5 \times 1.0 \times 10.5 \times 1.0 \times 10.5 \times 10.5$	Valve model	NC						
Response $(=)$ Accuracy $(=)$ Linearity $(=)$ Linearity $(=)$ Repeatability $(=)$ Operating differential pressure $(=)$ 100~300kPa(D) $(=)$ Max. operating pressure $(=)$ Operating differential pressure $(=)$	Flow rate control range		2~100	% of F.S.				
AccuracyImage: Second Sec	Response		≦1.0s	ec(T98)				
Linearity $\pm 0.5 \ III = 0.5 \ IIII = 0.5 \ IIIII = 0.5 \ IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII$	Accuracy		±1.04	%F.S.				
Repeatability $\pm 0.2 \forall F.S.$ Operating differential pressue $100 \sim 300 k Pa (D)$ $150 \rightarrow UF (B)$ $200 \sim 300 k Pa (D)$ Max. operating pressure $300 \leftarrow 300 k Pa (D)$ $300 \leftarrow 300 k Pa (D)$ $100 \sim 300 k Pa (D)$ Pressure resistance $11 \leftarrow 200 \sim 300 k Pa (D)$ $300 \leftarrow 300 k Pa (D)$ $100 \sim 300 k Pa (D)$ Operating temperature $-100 \leftarrow 300 k Pa (D)$ $100 \sim 300 k Pa (D)$ $100 \sim 300 k Pa (D)$ Operating temperature $-100 \leftarrow 300 k Pa (D)$ $100 \sim 300 k Pa (D)$ $100 \sim 300 k Pa (D)$ Operating temperature $-100 \leftarrow 500 C (recommended tem = 10 + 100 m)$ $100 \sim 300 k Pa (D)$ Operating temperature $-100 \leftarrow 500 C (2 \sim 100 W F.S.)$ CX121: $4.32 \sim 200 A, 0.1 \sim 500 C (2 \sim 100 W F.S.)$ CX121: $4.32 \sim 200 A, 0.1 \sim 500 C (0 \sim 100 W F.S.)$ CX121: $4.32 \sim 200 A, 0.1 \sim 500 C (0 \sim 100 W F.S.)$ CX121: $4.32 \sim 200 A, 0.1 \sim 500 C (0 \sim 100 W F.S.)$ CX121: $4.32 \sim 200 A, 0.1 \sim 500 C (0 \sim 100 W F.S.)$ CX121: $4.32 \sim 200 A, 0.1 \sim 500 C (0 \sim 100 W F.S.)$ 	Linearity		±0.5°	%F.S.				
Operating differential pressure100~300kPa(D)150~30KPa(D)200~300kPa(D)Max. operating pressure $300KPa(D)$ $300KPa(D)$ $Max. operating pressurePressure resistance100-300KPa(D)100-300KPa(D)100-300KPa(D)Operating temperature300KPa(D)100-300KPa(D)100-300KPa(D)External leak rateCR: 1x10^{-8} P ressure ^{3}/{8} (He) or lessCM: 1x10^{-11} P rem ^{3}/{8} (He) or lessCM: 1x10^{-11} P rem ^{3}/{8} (He) or lessCR: 1x10^{-8} V DC (2-100\% F.S.) CX21: 4.32-20mA, 0.1-5VDC (2-100\% F.S.) CX21: 4.32-20mA, 0.1-5VDC (0-100\% F.S.) CX21: 4.20mA, 0-5VDC, 1.5VDC (0-100\% F.S.) CX21: 4.20mA, 0-5VDC, 1.5VDC (0-100\% F.S.) CX21: 4.20mA, 0-5VDC, 0-10VDC (0-100\% F.S.) CX21: 1.3-32VDC, 4.7VAPower supplyCX111: r15VDC45\% 150mA, r15VDC45\% 140mA CX21: 1.3-32VDC, 4.7VA CX21: 1.3-32VD$	Repeatability		±0.20	%F.S.				
Max. operating pressure Operating temperature Operating temperature Constraint of the state Determent leak rate CR: 1 × 10 -8 × 5 × 5 × 5 × 5 × 5 × 5 × 5 × 5 × 5 ×	Operating differential pressure	100~300kPa(D)	150~30	0kPa(D)	200~300kPa(D)			
Pressure resistance IMPerssure resistance Operating temperature G Deperating temperature CR: 1x10 ⁻⁸ p-rature range: 15~35°C) External leak rate CR: 1x10 ⁻⁸ p-rass Statum CR: 1x10 ⁻⁸ p-rass Flow rate setting signal Sx111: 0.1~5VDC (2~100% F.S.) Cx121: 4.32~20mA, 0.1~5VDC (0~100% F.S.) Flow rate output signal Cx111: 0~5VDC (0~100% F.S.) Cx121: 4~20mA, 0~5VDC, 1~5VDC (0~100% F.S.) Flow rate output signal Cx111: 0~5VDC (0~100% F.S.) Cx121: 4~20mA, 0~5VDC, 1~5VDC (0~100% F.S.) Power supply Cx111: 10~5VDC (0~100% F.S.) Cx121: 13~32VDC, 4.7VA Power supply Cx111: 15VDC±5% 150mA, -15VDC ±5% 140mA Cx121: 13~32VDC, 4.7VA Electrical connector DB15Pin Vetted materials CR: SUS316L, PTFE, Mag-trianses steel, Fluoro rubber Flitings Statum temperature 180mm	Max. operating pressure	300kPa(G)						
Operating temperature Concenting temperature Concenting temperature External leak rate CR: 1 × 10 ⁻⁸ P → ³ /s (He) or less CM: 1 × 10 ⁻¹¹ P → ³ /s (He) or less Flow rate setting signal Cx111: 0.1 ~ 5VDC (2 ~ 100% F.S.) Cx121: 4.32 ~ 20mA, 0.1 ~ 5VDC (0 ~ 100% F.S.) Cx121: 4.20mA, 0.5 VDC (0 ~ 100% F.S.) Cx121: 4 ~ 20mA, 0.5 VDC (0 ~ 100% F.S.) Cx121: 4 ~ 20mA, 0.5 VDC (0 ~ 100% F.S.) Cx121: 4 ~ 20mA, 0 ~ 5VDC (0 ~ 100% F.S.) Cx121: 4 ~ 20mA, 0 ~ 5VDC (0 ~ 100% F.S.) Power supply CX111: 1.5 VDC 5% 150mA, -15VDC 4% 140mA CX121: 13 ~ 32VDC, 4.7VA CX211: 1.5 VDC 1.5 WIDC 0% 100M F.S.) CX121: 13 ~ 32VDC, 4.7VA Flectrical connector CX111: 1.5 VDC 5% 150mA, -15VDC 4% 140mA CX121: 13 ~ 32VDC, 4.7VA CX211: 1.5 VDC 5% 150mA, -15VDC 4% 74M Wetted materials CR: SUS316L, PTFE, Magw=tainless steel, Fluoro rubber CM: SUS316L, PTFE, Magw=tainless steel, Fluoro rubber Fittings 3/8 inch SWL equivalent: 181mm	Pressure resistance		1MPa(G)					
External leak rateCR: 1×10 * B > m * (He) or less S(He) or less (L: 1×10 * He) m * (He) or less S(He) or lessFlow rate setting signalCx111: 0.1~5VDC (2~100% F.S.) Cx121: 4.32~200M, 0.1~5VDC, 1.08~5VDC 0.2 (100% C.S.) Cx121: 4.32~200M, 0.1~5VDC (2~100% F.S.) Cx121: 4.20 MA, 0~5VDC, 1.~5VDC (0~100% F.S.) Cx121: 4.20 MA, 0~5VDC, 1.~5VDC (0~100% F.S.) Cx121: 4.20 MA, 0~5VDC, 1.~5VDC 0~0~100VDC (0~100% F.S.) Cx221: 4.20 MA, 0~5VDC, 1~5VDC 0~100W F.S.)Power supplyCx111: +15VDC±5% 150MA, -15VDC ±5% 140MA Cx121: 13~32VDC, 4.7VACx211: +15VDC±5% 150MA, -15VDC ±5% 140MA Cx221: 13~32VDC, 4.7VAFlectrical connectorOB15PinDB9PinWetted materialsCR: SUS316L, PTFE, Magnet stainless steel, Fluoro rubber CM: SUS316L, PTFE, Magnet stainless steel, Fluoro rubber Stainless steel, Fluoro rubber Stainless steel, Fluoro rubberFittings3/8 inch SWL equivalent: 1810mm	Operating temperature	5~50°C (recommended temperature range: 15~35°C)						
Flow rate setting signalCx111: 0.1~5VDC (2~100% F.S.) Cx121: 4.32~20mA, 0.1~5VDC, 1.08~5VDC or 0.2~10VDC (2~100% F.S.) Cx221: 4.32~20mA, 0.1~5VDC, 1.08~5VDC or 0.2~10VDC (2~100% F.S.) Cx221: 4.32~20mA, 0.1~5VDC or 0~10VDC (0~100% F.S.) Cx221: 4~20mA, 0~5VDC, 1~5VDC or 0~10VDC (0~100% F.S.) Cx221: 4~20mA, 0~5VDC, 1~5VDC or 0~10VDC (0~100% F.S.) Cx221: 4~20mA, 0~5VDC, 1~5VDC or 0~10VDC (0~100% F.S.) 	External leak rate	CR: 1×10 ⁻⁸ Pa•m ³ /s (He) or less CM:1×10 ⁻¹¹ Pa•m ³ /s (He) or less						
Flow rate output signalCx111: 0~5VDC (0~100% F.S.) Cx121: 4~20mA, 0~5VDC, 1~5VDC or 0~10VDC (0~100% F.S.) Cx211: 4~20mA, 0~5VDC, 1~5VDC or 0~10VDC (0~100% F.S.) Cx211: 15VDC±5% 150mA, 15VDC±5% 140mA 	Flow rate setting signal	Cx111: 0.1~5VDC (2~100% F.S.) Cx121: 4.32~20mA, 0.1~5VDC, 1.08~5VDC or0	.2~10VDC (2~100% F.S.)	Cx211 : 0.1~5VDC (2 Cx221 : 4.32~20mA, 0.7	∼100% F.S.) 1∼5VDC, 1.08∼5VDC or 0.2∼10VDC (2∼100% F.S.)			
Power supplyCx111 : +15VDC±5% 150mA, -15VDC±5% 140mA Cx121 : : 13~32VDC, 4.7VACx211 : +15VDC±5% 150mA, -15VDC±5% 140mA Cx221 : : 13~32VDC, 4.7VAElectrical connectorDB15PinDB9PinWetted materialsCR: SUS316L, PTFE, Magnet: stainless steel, Fluoro rubber CM: SUS316L, PTFE, Magnet: stainless steel, Fluoro rubber Stainless steel, Fluoro rubberFittings3/8inch SWL equivalent: 181m; 1/2inch VCR equivalent: 180mm	Flow rate output signal	Cx111 : 0 ~ 5VDC (0~100% F.S.) Cx121 : 4 ~ 20mA, 0~ 5VDC, 1~ 5VDC or 0~10)VDC (0∼100% F.S.)	Cx211 : 0~5VDC (0~100% F.S.) Cx221 : 4~20mA, 0~5VDC, 1~5VDC or 0~10VDC (0~100% F.S.)				
Electrical connector DB15Pin DB9Pin Wetted materials CR: SUS316L, PTFE, Magnet: stainless steel, Fluoro rubber CM: SUS316L, PTFE, Magnet: stainless steel Fluoro rubber Fittings 3/8inch SWL equivalent: 181mm; 1/2inch VCR equivalent: 180mm	Power supply	Cx111 : +15VDC±5% 150mA, -15VD Cx121 : 13~32VDC, 4.7VA	C±5% 140mA	Cx211 : +15VDC±5% 150mA, -15VDC±5% 140mA Cx221 : 13~32VDC, 4.7VA				
Wetted materials CR: SUS316L, PTFE, Magnetic stainless steel, Fluoro rubber CM: SUS316L, PTFE, Magnetic stainless steel Fittings 3/8inch SWL equivalent: 181mm; 1/2inch VCR equivalent: 180mm	Electrical connector	DB15Pin		DB9Pin				
Fittings 3/8inch SWL equivalent: 181mm; 1/2inch VCR equivalent: 180mm	Wetted materials	CR: SI CM: S	US316L, PTFE, Magne US316L, PTFE, Magne	tic stainless steel, Fluoro tic stainless steel	o rubber			
	Fittings	3/8inch	SWL equivalent: 181mm	n; 1/2inch VCR equivale	nt: 180mm			

Product Features

系列	S48					
Model	DR111 DR121		DR211 DR221			
Full-scale of flow rate	300SLM	4005	SLM	500SLM		
Valve model		N	С			
Flow rate control range		2~100%	6 of F.S.			
Response		≦2.0se	ec(T98)			
Accuracy		±1.5%	%F.S.			
Linearity		±0.5%	%F.S.			
Repeatability		±0.2%	%F.S.			
Operating differential pressure		150~30	0kPa(D)			
Max. operating pressure		300k	Pa(G)			
Pressure resistance	1MPa(G)					
Operating temperature	$5\sim50^{\circ}$ C (recommended temperature range: $15\sim35^{\circ}$ C)					
External leak rate		1×10 ⁻⁸ Pa•m	³ /s (He) or less			
Flow rate setting signal	DR111: 0.1~5VDC (2~100% F.S.) DR121: 4.32~20mA, 0.1~5VDC, 1.08~5VDC或().2∼10VDC (2∼100% F.S.)	DR211 : 0.1~5VDC (2 DR221 : 4.32~20mA, 0.	~100% F.S.) 1~5VDC, 1.08~5VDC 或 0.2~10VDC (2~100% F.S.)		
Flow rate output signal	DR111 : 0~5VDC (0~100% F.S.) DR121 : 4~20mA, 0~5VDC, 1~5VDC 或 0~10	0VDC (0∼100% F.S.)	DR211 : 0~5VDC (0~ DR221 : 4~20mA, 0~	100% F.S.) 5VDC, 1~5VDC 或 0~10VDC (0~100% F.S.)		
Power supply	DR111 : +15VDC±5% 250mA, -15VD DR121: 13~32VDC, 7.5VA	C±5% 250mA	DR211 : +15VDC±5% 250mA, -15VDC±5% 250mA DR221 : 13~32VDC, 7.5VA			
Electrical connector	DB15Pin DB9Pin					
Wetted materials	SUS	316L, PTFE, Magnetic	stainless steel, Fluoro ru	ubber		
Fittings	3/8inc	h SWL equivalent:183n	nm;1/2inch VCR equiva	lent: 182mm		



Model Selection

1	2	3	4	5	6
Model	Flow rate (N2)	Wetted materials	Electrical connector	Power supply	Signal
S48: MFC S48M: MFM	B:10SCCM~50SLM C:100SLM~200SLM D:300SLM~500SLM	R:Rubber M:Metal	1:Dsub15Pin Male 2:Dsub9Pin Male	1:±15V 2:24V	1 (111/211) : 0-5V 1 (121/221) : 4-20mA/0-5V/1-5V/0-10V

7	8	9
Gas	Full scale flow rate	Fittings
N2 O2 NH3	(10,20,30,50,100,200,300,500)SCCM (1,2,3,5,10,20,30,50)SLM (100,150,200)SLM (300,400,500)SLM	4IS: 1/4"SWL 4CR: 1/4"VCR 6IS: 3/8"SWL 8CR: 1/2"VCR

Parameters matching

1	2	3	4	5	6	7	8	9
S48	В	R		221		N ₂	100SCCM	4CR

External dimensions

BR111/121/211/221



12.7

BM111/121/211/221



CR/CM 111/121/211/221





DR111/121/211/221







Fittings

Product	Fitting	L	W	т	н	D
S/8 BD111/101/011/001	4IS: 1/4 inch Swagelok	127	75.8	35	124	12.7
340-DITT1/121/211/221	4CR: 1/4 inch VCR	124	75.8	35	124	12.7
S/8-BM111/121/211/221	4IS: 1/4 inch Swagelok	127	70	35	124	12.7
040-010111/121/211/221	4CR: 1/4 inch VCR	124	70	35	124	12.7
S48-CR111/121/211/221	6IS: 3/8 inch Swagelok	188	125	45	158	22
	8CR: 1/2 inch VCR	180	125	45	158	22
S48-CM111/121/211/221	6IS: 3/8 inch Swagelok	188	125	45	157	22
	8CR: 1/2 inch VCR	180	125	45	157	22
S48-DR111/121/211/221	6IS: 3/8 inch Swagelok	183	127	50	150	25
	8CR: 1/2 inch VCR	182	127	50	150	25

S48 Electrical connection

DB15/M Electric connectors' definition of ±15VDC power supply

Pin	Signal Name
1	Power/Signal COM
2	Flow signal output
3	NC *1
4	NC *1
5	+15V Power
6	-15V Power
7	NC *1
8	Flow signal input
9	Power COM
10	Signal COM
11	NC *1
12	Valve override (N.C. \rightarrow control,+15V \rightarrow open,-15V \rightarrow close)
13	NC *1
14	Chassis(Earth)
15	NC *1
	*1: Non connection

DB9/M Electric connectors' definition of ±15VDC power supply

Pin	Signal Name
1	Valve override
2	Flow signal output
3	+15V Power
4	Power COM
5	-15V Power
6	Flow signal input
7	Signal COM
8	Signal COM
9	NC *1

DB15/M Electric connectors' definition of 24VDC power supply

Pin	Signal Name
1	Signal COM
2	Flow signal output (4~20mA)
3	Flow signal output (0~5VDC, 1~5VDC or 0~10VDC)
4	Valve override (N.C. \rightarrow control; 0V \rightarrow close;+24V \rightarrow open)
5	+24V Power
6	NC *1
7	NC *1
8	Flow signal input
9	Power COM
10	Signal COM
11	NC *1
12	NC *1
13	NC *1
14	Chassis(Earth)
15	NC *1
	*1: Non connection

DB9/M Electric connectors' definition of 24VDC power supply

Pin	Signal Name
1	Valve override (N.C. \rightarrow control; 0V \rightarrow close;+24V \rightarrow open)
2	Flow signal output
3	+24V Power
4	Power COM
5	NC *1
6	Flow signal input
7	Signal COM
8	Signal COM
9	NC *1
	*1: Non connection

1: Non connection

S48 Connection





S48 Accessories

Power supply



MT-51D

Setting flow rate Display flow rate Valve override (control / open / close switch) Accumulation flow rate Digital communication DIN standard, size 96*96 (mm)

Power supply



MT-52

Setting flow rate Display flow rate Valve override (control / open / close switch) DIN standard, size 96*96 (mm)

Cable



MT-SC-D15F-15V-XXM 24V 2M 24C 3M 10M

MT-SC-D9F-15V-XXM 24V 2M 24C 3M 10M

HORIBA global sales

Japan Company name: HORIBA STEC, Co., Ltd. Address: Head Office/Factory, 11-5, Hokodate-cho, Kamitoba, Minami-ku, Kyoto-shi, Kyoto, 601-8116, Japan Tel: +81 75 693 2300

Beijing, China Company name: HORIBA Precision Instruments (Beijing) Co., Ltd. Address: Building 1, No.3 Xixing Road, Houshayu Town, Shunyi District, Beijing, 101300, China Tel: +86 10 84929402

Taiwan, China Company name: HORIBA Taiwan, Inc. Address: 8F-8, No.38, Taiyuan St., Zhubei City, Hsinchu County, 30265, Taiwan, China Tel: +886 3 560 0606

Korea

Company name: HORIBA STEC Korea, Ltd. Address: 98, Digital valley-ro, Suji-gu, Yongin-si, Gyeonggi-do, 16878, Korea Tel: +82 31 8025 6500

Singapore Company name: HORIBA Instruments (Singapore) Pte Ltd. Address: 3 Changi Business Park Vista #01-01, AkzoNobel House, 486051, Singapore Tel: +65 6 745 8300

United Kingdom Company name: HORIBA UK Ltd. Address: Kyoto Close, Moulton Park, Northampton, NN3 6FL, England,United Kingdom Tel: +44 1604 542500

India

Company name: HORIBA India Pvt Ltd. Address: 246, Okhla Industrial Estate, Phase 3, New Delhi, India Tel: +91 11 4646 5000



Beijing, China Company name: HORIBA Precision Instruments (Beijing) Co., Ltd. Address: Building 1, No.3 Xixing Road, Houshayu Town, Shunyi District, Beijing, 101300, China Tel: +86 10 84929402

