SEC-N100Series

▶Common specifications

Mass Flow controller model	SEC-N112MGM SEC-N114MGM SEC-N115MGM SEC-N116MGM SEC-N117MGM	SEC-N112MGR(W) SEC-N114MGR(W) SEC-N115MGR SEC-N116MGR SEC-N117MGR	SEC-N122MGM SEC-N124MGM SEC-N125MGM SEC-N126MGM SEC-N127MGM	SEC-N122MGR(W) SEC-N124MGR(W) SEC-N125MGR SEC-N126MGR SEC-N127MGR	SEC-N132MGM SEC-N134MGM SEC-N135MGM SEC-N136MGM –	SEC-N132MGR SEC-N134MGR SEC-N135MGR SEC-N136MGR –	SEC-N142MGM SEC-N144MGM SEC-N145MGM SEC-N146MGM –	SEC-N142MGR SEC-N144MGR SEC-N145MGR SEC-N146MGR –	SEC-N172R SEC-N174R SEC-N175R SEC-N176R SEC-N177R	Mass Flow controller model
Mass Flow meter mode	SEF-N112MGM SEF-N114MGM SEF-N115MGM SEF-N116MGM SEF-N117MGM	SEF-N112MGR(W) SEF-N114MGR(W) SEF-N115MGR SEF-N116MGR SEF-N117MGR	SEF-N122MGM SEF-N124MGM SEF-N125MGM SEF-N126MGM SEF-N127MGM	SEF-N122MGR(W) SEF-N124MGR(W) SEF-N125MGR SEF-N126MGR SEF-N127MGR	SEF-N132MGM SEF-N134MGM SEF-N135MGM SEF-N136MGM –	SEF-N132MGR SEF-N134MGR SEF-N135MGR SEF-N136MGR –	SEF-N142MGM SEF-N144MGM SEF-N145MGM SEF-N146MGM –	SEF-N142MGR SEF-N144MGR SEF-N145MGR SEF-N146MGR –	SEF-N172R SEF-N174R SEF-N175R SEF-N176R SEF-N177R	Mass Flow meter model
Full-scale flow rate (N_2 conversion flow rate) Full scale flow ranges are distinguished by BIN number except SEC(F)-N17xR	R01 : 10SCCM R1.5: 17.5SCCM 01 : 30SCCM 1.5 : 55SCCM 02 : 100SCCM 2.5 : 175SCCM	03 : 300SCCM 3.5 : 550SCCM 04 : 1SLM 4.5 : 1.75SLM 05 : 3SLM 5.5 : 5.5SLM 06 : 10SLM	6.5: 22 SLM 07 : 30 SLM 08 : 50 SLM		09: 100 SLM		10 : 200 SLM		300/500/1000SLM	Full-scale flow rate (N_2 conversion flow rate) Full scale flow ranges are distinguished by BIN number except SEC(F)-N17xR
Valve type	C: Normally close				C: Normally close/O: Normally open				Normally close	Valve type
Flow rate at fully closed control valve	≤2% F.S.				≤2% F.S.				≤5% F.S.	Flow rate at fully closed control valve
Flow rate control range	2-100% of F.S.				2-100% of F.S.				5-100% of F.S.	Flow rate control range
Flow rate measuring range (SEF)	0-100% of F.S.				0-100% of F.S.					Flow rate measuring range (SEF)
Accuracy *1	±1.0% S.P. (Flow rate > 30% F.S.) ±0.3% F.S. (Flow rate ≤ 30% F.S.)				±1.0% S.P. (Flow rate > 35% F.S.) ±0.35% F.S. (Flow rate ≤ 35% F.S.)				±2.0% F.S.	Accuracy *1
Operating temperature	5 to 50°C (recommended temperature range: 15 to 45°C)				5 to 50°C (recommended temperature range: 15 to 45°C)					Operating temperature
Response	≤1 second: over full flow rate range				≤1 second: over full flow rate range				≤2 second (T98)Typical	Response
Linearity	≤±0.5% F.S.				≤±0.5% F.S.				≤1.0% F.S.	Linearity
Repeatability	≤±0.2% F.S.				≤±0.2% F.S.				≤1.0% F.S.	Repeatability
Operating differential pressure	50 to 300 kPa (d) MR.MG-5.5, 06: 100 to 300 kPa (d)		200 to 300 kPa (d)		100 to 300 kPa (d)		200 to 300 kPa (d)		150 to 300 kPa (d) (300/500 SLM)*5 250 to 350 kPa (d) (1000 SLM)	Operating differential pressure
Operating differential pressure (SEF)		≤300 kPa (d)			≤300 kPa (d)				≤350 kPa (d)	Operating differential pressure (SEF)
MAX. Operating pressure		450 kPa (g)			450 kPa (g)				350 kPa (g)	MAX. Operating pressure
Pressure resistance		1000 kPa (g)			1000 kPa (g)					Pressure resistance
Leak integrity	≤5x10^{-12}Pa•m^3/s (He)	≤1x10^{-10}Pa•m^3/s (He)	≤5x10^{-12}Pa•m^3/s (He)	≤1x10^{-10}Pa•m^3/s (He)	≤5x10^{-12}Pa•m^3/s (He)	≤1x10^{-10}Pa•m^3/s (He)	≤5x10^{-12}Pa•m^3/s (He)	≤1x10^{-10}Pa•m^3/s (He)	≤1x10^{-7}Pa•m^3/s (He)	Leak integrity
Wetted materials	SUS316L PTFE magnetic stainless *2	SUS316L PTFE magnetic stainless *2 Elastomer	SUS316L PTFE magnetic stainless *2	SUS316L PTFE magnetic stainless *2 Elastomer	SUS316L	SUS316L Elastomer	SUS316L	SUS316L Elastomer	SUS316/SUS304 PTFE magnetic stainless *2 Elastomer	Wetted materials
Standard fitting	1/4 inch VCR equivalent, 1/4 inch Swagelok equivalent *3				1/2 inch VCR equivalent, 3/8 inch Swagelok equivalent *4				1/2 inch VCR equivalent, 1/2 inch Swagelok equivalent	Standard fitting
Mounting orientation	Free				Free					Mounting orientation

*1 The precision is that associated with the full-scale MR and MG number values. The flow rate precision guaranteed temperatures conform to SEMI standards. For details, please contact HORIBA STEC.
*2 Neither PTFE nor magnestic stainless steel are used for mass flow mater. *3 1/4" Swagelok equivalent is applicable with SEC-N1××RW Series.
*4 3/8" Swagelok equivalent is applicable with SEC-N13×R, SEC-N14×R. *5 Outlet pressure is required 0 kPa (g) or higher.

- SCCM, SLM are numbers that represents flow rate (mL/min, L/min, at 0°C101.3 kPa).
- Note that components or production methods may be modified for productivity reasons at any time without notice provided that such modification does not alter the product specifications.

▶Communication/power supply

Digital/Analog communication model
SEC-N102(W)

Mass Flow controller model	SEC-N112MGM	SEC-N112MGR(W)	SEC-N122MGM	SEC-N122MGR(W)	SEC-N132MGM	SEC-N132MGR	SEC-N142MGM	SEC-N142MGR	SEC-N172R
Mass Flow meter model	SEF-N112MGM	SEF-N112MGR(W)	SEF-N122MGM	SEF-N122MGR(W)	SEF-N132MGM	SEF-N132MGR	SEF-N142MGM	SEF-N142MGR	SEF-N172R
Flow rate setting signal	0.1 to 5 V DC (2% to F.S.); input impedance 1MΩ or higher								
Flow rate output signal	0 to 5 V DC (0% to F.S.); minimum load resistance 2kΩ								
Digital interface	With address function: RS-485 (transmission speed 38400bps) F-NET Protocol								
Power supply	+15 V ±5% 150 mA -15 V ±5% 200 mA		+15 V ±5% 150 mA -15 V ±5% 250 mA		+15 V ±5% 150 mA -15 V ±5% 150 mA				+15 V ±5% 150 mA -15 V ±5% 200 mA

DeviceNet™ communication model
SEC-N104(W)

Mass Flow controller model	SEC-N114MGM	SEC-N114MGR(W)	SEC-N124MGM	SEC-N124MGR(W)	SEC-N134MGM	SEC-N134MGR	SEC-N144MGM	SEC-N144MGR	SEC-N174R
Mass Flow meter model	SEF-N114MGM	SEF-N114MGR(W)	SEF-N124MGM	SEF-N124MGR(W)	SEF-N134MGM	SEF-N134MGR	SEF-N144MGM	SEF-N144MGR	SEF-N174R
Digital interface	DeviceNet™ Protocol								
Power supply	Comforming to ODVA standards, 24 V DC								
	7.0 VA				4.0 VA				7.0 VA

CC-Link™ communication/Analog communication
SEC-N105

Mass Flow controller model	SEC-N115MGM	SEC-N115MGR	SEC-N125MGM	SEC-N125MGR	SEC-N135MGM	SEC-N135MGR	SEC-N145MGM	SEC-N145MGR	SEC-N175R
Mass Flow meter model	SEF-N115MGM	SEF-N115MGR	SEF-N125MGM	SEF-N125MGR	SEF-N135MGM	SEF-N135MGR	SEF-N145MGM	SEF-N145MGR	SEF-N175R
Flow rate setting signal	0.1 to 5 V DC/0.2 to 10 V DC/4.32 to 20 mA (2% to F.S.)								
Flow rate output signal	0 to 5 V DC/0 to 10 V DC/4 to 20 mA (0% to F.S.)								
Digital interface	By CC-Link™ Protocol station type: Remote device station; Occupied station: 1 occupied station; CC-Link™ version: Ver. 1.10								
Power supply	24 V DC (13 to 32 V DC)								
	7.5 VA				4.5 VA				7.5 VA

PROFIBUS™ communication/Analog communication
SEC-N106

Mass Flow controller model	SEC-N116MGM	SEC-N116MGR	SEC-N126MGM	SEC-N126MGR	SEC-N136MGM	SEC-N136MGR	SEC-N146MGM	SEC-N146MGR	SEC-N176R
Mass Flow meter model	SEF-N116MGM	SEF-N116MGR	SEF-N126MGM	SEF-N126MGR	SEF-N136MGM	SEF-N136MGR	SEF-N146MGM	SEF-N146MGR	SEF-N176R
Flow rate setting signal	0.1 to 5 V DC/0.2 to 10 V DC/4.32 to 20 mA (2% to F.S.)								
Flow rate output signal	0 to 5 V DC/0 to 10 V DC/4 to 20 mA (0% to F.S.)								
Digital interface	PROFIBUS™-DP Protocol								
Power supply	24 V DC (13 to 32 V DC)								
	7.5 VA				4.5 VA				7.5 VA

EtherCAT® communication mode
SEC-N107

Mass Flow controller model	SEC-N117MGM	SEC-N117MGR	SEC-N127MGM	SEC-N127MGR	SEC-N177R
Mass Flow meter model	SEF-N117MGM	SEF-N117MGR	SEF-N127MGM	SEF-N127MGR	SEF-N177R
Digital interface	EtherCAT® Protocol				
Power supply	24VDC±4V				
	7.5VA				7.2VA