

# WATER SUPPLY FLOW METER

## SPECIFICATIONS

SST40151 23.11

### 1. Outline

This water supply flow meter is an impeller type flow meter best suited for measurement and control of cold water, hot water and very hot water used for cooling & heating, water supply to boilers and in chemical & water treating plants. It realized a compact and lightweight construction while incorporating a strainer in it. It also enables mounting of a variety of signal transmitters.



### 2. Features

- Built-in strainer.
- Available to measure high-temperature water up to 200°C.
- Remote totalizing and flow rate indication and also recording are possible.

### 3. Specification

#### Specification of measuring unit

Nominal size symbol		20	25	40	50	
volume symbol		A	A   B	A   B	A   B	
Measured fluid		Water, hot water				
Nominal size		20A	25A	40A	50A	
Liquid viscosity		Viscosity equivalent to 1mPa · s				
Liquid temperature		General : 110 °C or less		High-temperature : 110 ~ 200 °C		
Liquid pressure		2.0 MPa or less				
Accuracy		Within ±1.0%				
Connection	Flange	JIS5K, 10K, 20K, ANSI class150, 300 (For the details, see paragraph of "Process connection and face-to-face dimensions")				
Material	Material symbol	FB	Body : FCD450, Internal structure set : SCS13※1, Fanwheel : C5191P, Head Cover: FC200 or FCD450			
		F7	Body : FCD450, Internal structure set : SCS13※2, Fanwheel : SUS304, Head Cover: FC200 or FCD450			
		S7	Body : SCS13, Internal structure set : SCS13, Fanwheel : SUS304, Head Cover: SCS13			
	(Note) Nominal size symbol 20, Capacity symbol A can use only material symbol FB. Nominal size symbol 50, Capacity symbol B can use only material symbol FB and F7. ※1 : Nominal size symbol 20, Capacity symbol A become C3604BD, and Nominal size symbol 50, Capacity symbol B become CAC406. ※2 : Nominal size symbol 50, Capacity symbol B become SUS304. FC200:Cast iron; FCD450:Ductile cast iron; CAC406:Cast bronze; SCS13:Stainless steel casting; SUS304:Stainless steel; C5191P:Phosphor bronze; C3604BD:Free cutting brass					
Material & Permissible Pressure		Nominal Pressure	Flange standard		Material symbol	Permissible Pressure (Liquid Temp.~200°C) MPa
		5K	JIS5K		FB/F7/S7	0.5
		10K	JIS10K, ANSI class150			1.0
20K	JIS20K, ANSI class300		2.5			

#### Specification of counter unit

Nominal size symbol		20	25	40	50	
Volume symbol		A	A   B	A   B	A   B	
Types		Available from Direct-read totalizing type or zero reset type.				
Indication	Direct-reading type	Pointer Dial plate	Scale unit	0.1 L		1 L
		Total counter	Volume/rev.	10 L		100 L
			Indication unit	10 L		100 L
	Zero-rest type	Pointer Dial plate	Scale unit	0.1 L		1 L
			Volume/rev.	10 L		100 L
		Zero-reset counter	Indication unit	10 L		100 L
		No. of digits	5 ( 99,999 x 10L )		5 ( 99,999 x 100L )	
Output	Pulse output (Option)	Unit pulse	Type of signal	Either one of (1) voltage no-contact signal (high frequency type), or (2) reed switch contact signal.		
			Output unit	Refer to "No-contact output pulse unit table"		
				Refer to "Contact output pulse unit table"		
		DA conversion pulse		No-contact pulse output possible		
			Note 1) Combination of zero-rest type and pulse output type can not be made. Note 2) Unit pulse and DA conversion pulse can not be output simultaneously.			
Analogue signal		Direct output impossible (DA converter required outside.)				

Power source	The following external power sources are required, for outputting voltage no-contact signal: High frequency type pulse generator : 6~26.4VDC, 23mA(at 24VDC) 17mA (at 12VDC)
Ambient temperature	-10~60 °C , For explosion-proof type, -10 to 40 °C
Explosionproof	Flameproof enclosure type d2G4 Only case of reed switch pulser.
Cooling fin	When liquid temperature exceeds 110 °C: Single radiating fin is necessary. When liquid temperature exceeds 180 °C: Double radiating fins are necessary.
Material	Aluminum die casting, plastic

Output pulse unit table (Optional)

No-contact output pulse unit table (High frequency type)

Nominal size & volume symbol	One rev. of pointer	Pulse unit					
		10mL/P	100mL/P	1L/P	10L/P	100L/P	1m <sup>3</sup> /P
20A	10L	○	○	—	—	—	—
25A	100L	○	○	○	—	—	—
25B	100L	○※1	○	○	—	—	—
40A	100L	—	○	○	—	—	—
40B/50A	100L	—	○	○	—	—	—
50B	100L	—	○	○	○	—	—

※1 : Manufacturable in case of 110P/s or less

Contact output pulse unit table (Reed switch type)

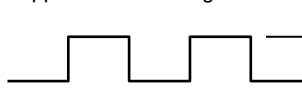
Nominal size & volume symbol	One rev. of pointer	Pulse unit					
		10mL/P	100mL/P	1L/P	10L/P	100L/P	1m <sup>3</sup> /P
20A	10L	—	○	○	○	—	—
25A	100L	—	—	○	○	○	—
25B	100L	—	—	○	○	○	—
40A	100L	—	—	○	○	○	—
40B/50A	100L	—	—	○	○	○	—
50B	100L	—	—	○※2	○	○	—

※2 : Manufacturable in case of 5P/s or less

•High frequency pulse generator (Symbol : M)

Output signal: Voltage no-contact pulse

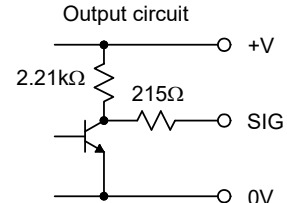
Approximate rectangular wave



H : 17V or more (10 kΩ load) (+V = 24VDC)  
 H : 8V or more (10 kΩ load) (+V = 12VDC)  
 L : 0.5V or less (10 kΩ load)

Output resistance : approx. 2.4kΩ

Output circuit



Max. generated pulse : 110P/sec  
 Power source : 6 – 26.4VDC  
 Power consumption : 23 mA or less(+V = 24VDC)  
 17 mA or less (+V = 12VDC)

•Reed switch pulse generator (Symbol : R)

Type	Output signal	Max. voltage	Max. current	Switch capacity	Contact resistance	Max. generated pulse
DRR-5	No-voltage contact pulse	200VAC·DC	1A	25W	0.06Ω	5P/sec
MR506	No-voltage contact pulse	50VDC	250mA	15W	0.1Ω	5P/sec

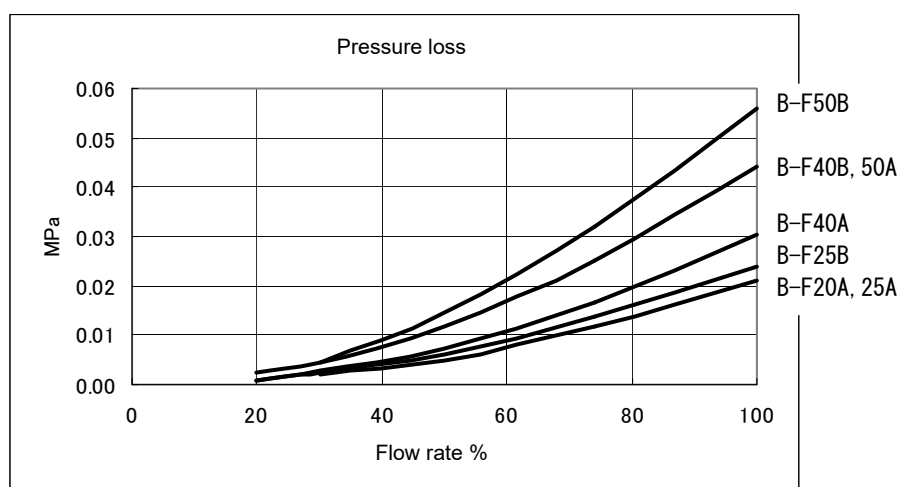
4. Flow range (m<sup>3</sup>/h)

Nominal size	Volume symbol	General 110 °C or less	High-temperature 110~200 °C
20	A	0.3~1.5	0.3~0.9
25	A	0.5~2.5	0.5~1.5
	B	1.0~5.0	1.0~3.0
40	A	1.5~7.0	1.5~4.5
	B	3.0~15.0	3.0~9.0
50	A	3.0~15.0	3.0~9.0
	B	6.0~25.0	6.0~18.0

(note) Please select the type of which 40~60% of Max. flow rate is as same as operation flow rate.

5. Pressure loss

Nominal size & volume symbol : 2 0 A ~ 5 0 B



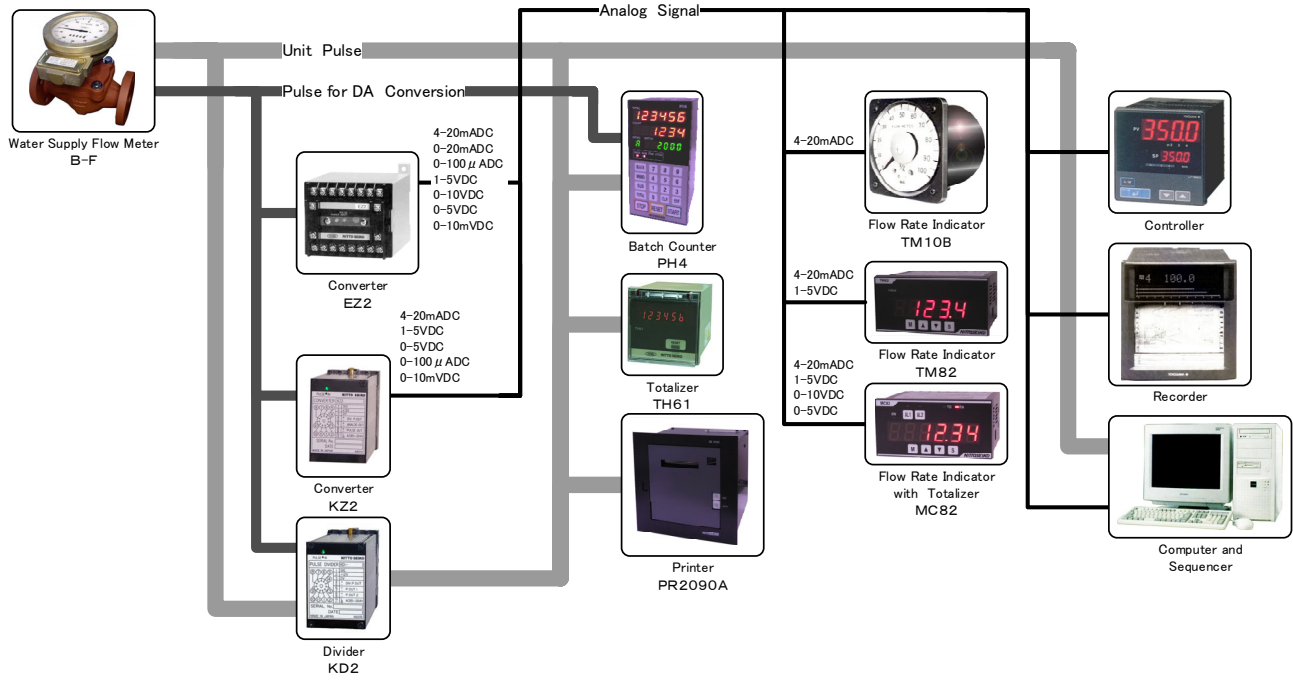
Nominal size & volume symbol	Flow rate 100%
20A	1.5 m <sup>3</sup> /h
25A	2.5 m <sup>3</sup> /h
25B	5.0 m <sup>3</sup> /h
40A	7.0 m <sup>3</sup> /h
40B	15.0 m <sup>3</sup> /h
50A	15.0 m <sup>3</sup> /h
50B	25.0 m <sup>3</sup> /h

6. Process connection and face-to-face dimensions (mm)

Nominal size & volume symbol	Material symbol	JIS		ANSI	
		10K	20K	class150	class 300
2 0 A	F B	225	225		
2 5 A	F B · F 7	225	225	225	225
2 5 B	S 7	225	225	225	229
4 0 A	F B · F 7	245	250	245	
4 0 B	S 7	245	245	245	253
5 0 A	F B · F 7	245	250	245	
	S 7	245	245	245	253
5 0 B	F B · F 7	250	254	250	

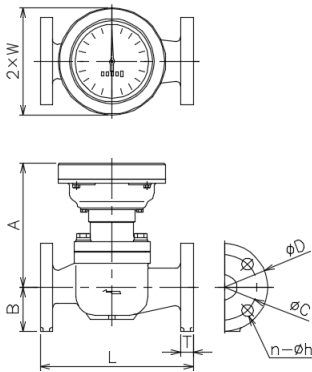
Process connection shown by blank column can not be manufactured.

7. Remote measurement system



※ The detailed input/output conditions vary depending on the specifications of the respective converter and receivers. Check with the specification sheet of the respective instruments.

8. External dimensions (mm)



● General application

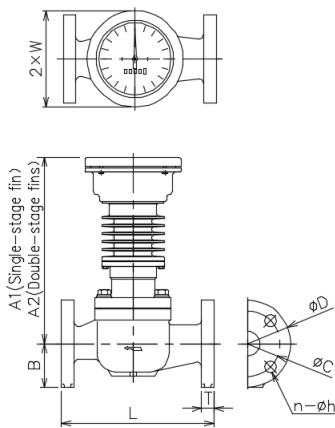
Nominal size symbol & Capacity symbol	Nominal size	Flange standard	L		A	B	W	D	T		C	n	h	Weight (kg)
			FCD	SCS					FB/F7	S7				
20A	20	JIS10K	225	—	191	50	86	100	18	—	75	4	15	8.5
		JIS20K												
25A 25B	25	JIS10K	225	225	191	62.5	86	125	20	16	90	4	19	9.4
		JIS20K												
40A 40B	40	JIS10K	245	245	200	70	86	140	20	18	105	4	19	12.8
		JIS20K	250						22					13.2
50A	50	JIS10K	245	245	200	77.5	86	155	20	18	120	4	19	14.5
		JIS20K	250						22			8		15.0
50B	50	JIS10K	250	—	203	77.5	86	155	20	—	120	4	19	15.4
		JIS20K	254						22			8		16.0

Note) 1. Shown weight is for material code FB.

● High-temperature application

Nominal size symbol & Capacity symbol	Nominal size	Flange standard	L		A 1	A 2	B	W	D	T		C	n	h	Weight (kg)
			FCD	SCS						FB/F7	S7				
20A	20	JIS10K	225	—	290	389.5	50	77	100	18	—	75	4	15	9.3
		JIS20K													
25A 25B	25	JIS10K	225	225	290	389.5	62.5	77	125	20	16	90	4	19	10.2
		JIS20K													
40A 40B	40	JIS10K	245	245	299	398.5	70	77	140	20	18	105	4	19	13.6
		JIS20K	250							22					14.0
50A	50	JIS10K	245	245	299	398.5	77.5	77	155	20	18	120	4	19	15.3
		JIS20K	250							22			8		15.8
50B	50	JIS10K	250	—	302	402	77.5	77	155	20	—	120	4	19	16.2
		JIS20K	254							22			8		16.8

Note) 1. Shown weight is for material code FB and Single-stage fin



● Pulse generator type

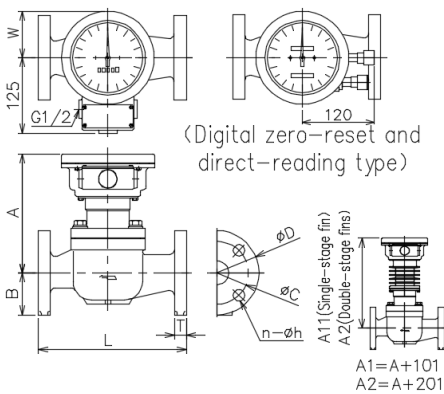
Nominal size symbol & Capacity symbol	Nominal size	Flange standard	L		A	B	W	D	T		C	n	h	Weight (kg)
			FCD	SCS					FB/F7	S7				
20A	20	JIS10K	225	—	189	50	77	100	18	—	75	4	15	8.9
		JIS20K												
25A 25B	25	JIS10K	225	225	189	62.5	77	125	20	16	90	4	19	9.8
		JIS20K												
40A 40B	40	JIS10K	245	245	198	70	77	140	20	18	105	4	19	13.2
		JIS20K	250						22					13.6
50A	50	JIS10K	245	245	198	77.5	77	155	20	18	120	4	19	14.9
		JIS20K	250						22			8		15.4
50B	50	JIS10K	250	—	201	77.5	77	155	20	—	120	4	19	15.8
		JIS20K	254						22			8		16.4

Note) 1. In case of single-stage fin, size is A + 101mm.

2. In case of double-stage fins, size is A + 201mm.

3. Shown weight is for Pulse generator type and material code FB.

4. The weight in case of Digital zero-reset and direct-reading type rises 0.2kg from a list mention level.



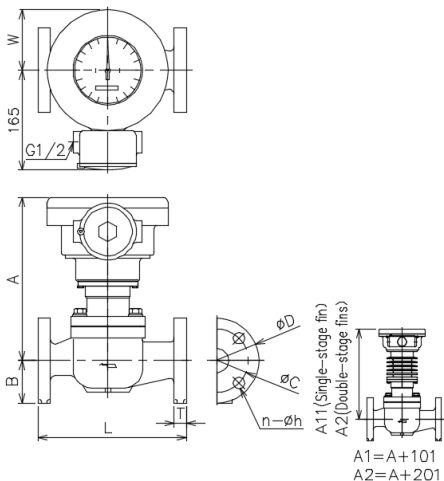
● Explosion-proof type

Nominal size symbol & Capacity symbol	Nominal size	Flange standard	L		A	B	W	D	T		C	n	h	Weight (kg)
			FCD	SCS					FB/F7	S7				
25A 25B	25	JIS10K	225	225	263	62.5	100	125	20	16	90	4	19	14.9
		JIS20K												
40A 40B	40	JIS10K	245	245	272	70	100	140	20	18	105	4	19	18.3
		JIS20K	250						22					18.7
50A	50	JIS10K	245	245	272	77.5	100	155	20	18	120	4	19	20.0
		JIS20K	250						22			8		20.5
50B	50	JIS10K	250	—	275	77.5	100	155	20	—	120	4	19	20.9
		JIS20K	254						22			8		21.5

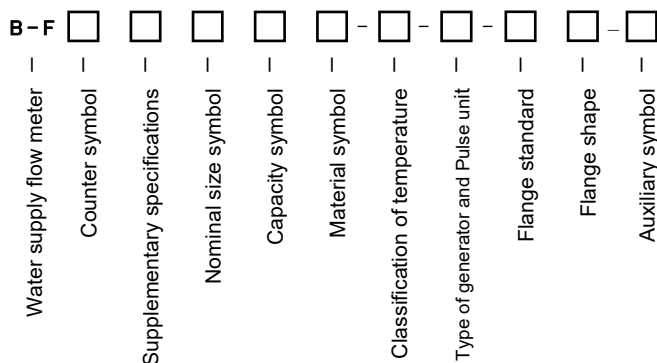
Note) 1. In case of single-stage fin, size is A + 101mm.

2. In case of double-stage fins, size is A + 201mm.

3. Shown weight is and material code FB.



9. Product code



●: Standard; ○: Manufacturable; ×: Non-manufacturable

Type	Specification code	Specifications	20A	25A	25B	40A	40B	50A	50B
B-F		Water supply flow meter	●	●	●	●	●	●	●
Counter symbol		Pointer and direct-reading type	●	●	●	●	●	●	●
	C	With unit pulse output	○	○	○	○	○	○	○
	H	DA conversion pulse output	○	○	○	○	○	○	○
	Z	Digital zero-reset and direct-reading type	○	○	○	○	○	○	○
Supplementary specifications		Without Radiating fin	●	●	●	●	●	●	●
	F	Radiating fin	○	○	○	○	○	○	○
	X	Flameproof enclosure type	×	○	○	○	○	○	○
	FX	Flameproof enclosure type + With Radiating fin	×	○	○	○	○	○	○
Single-stage fin in the case where the liquid temperature exceeds 110°C, and double-stage fins in the case where the liquid temperature exceeds 180°C.									
Nominal size symbol	20	Nominal size: 20A	●						
	25	Nominal size: 25A		●	●				
	40	Nominal size: 40A				●	●		
	50	Nominal size: 50A						●	●
Capacity symbol	A	Volume small	●	●		●		●	
	B	Volume large			●		●		●
Material symbol	FB	Main body: FCD450, Internal structure:SCS13※1 Fanwheel: C5191P,Head Cover:FC200 or FCD450	●	●	●	●	●	●	●
	F7	Main body: FCD450, Internal structure:SCS13※2, Fanwheel: SUS304,Head Cover:FC200 or FCD450	×	○	○	○	○	○	○
	S7	Main body: SCS13, Internal structure:SCS13, Fanwheel: SUS304,Head Cover:SCS13	×	○	○	○	○	○	×
Classification of temperature		110 °C or less	●	●	●	●	●	●	●
	LS2	Over 110°C but no higher than 200°C	○	○	○	○	○	○	○
Type of generator and Pulse unit		Without pulse output	●	●	●	●	●	●	●
	R3	Reed switch (contact) pulse 0.1L/P	○	×	×	×	×	×	×
	R4	Reed switch (contact) pulse 1L/P	○	○	○	○	○	○	○※4
	R5	Reed switch (contact) pulse 10L/P	○	○	○	○	○	○	○
	R6	Reed switch (contact) pulse 100L/P	×	○	○	○	○	○	○
	M2	High frequency(no contact) pulse 0.01L/P	○	○	○※3	×	×	×	×
	M3	High frequency(no contact) pulse 0.1L/P	○	○	○	○	○	○	○
	M4	High frequency(no contact) pulse 1L/P	×	○	○	○	○	○	○
	M5	High frequency(no contact) pulse 10L/P	×	×	×	×	×	×	○
Flange standard	05	JIS5K	×	○	○	○	○	○	×
		JIS10K	●	●	●	●	●	●	●
	20	JIS20K	○	○	○	○	○	○	○
	AS1	ANSI class150	×	○	○	○	○	○	○
	AS3	ANSI class300	×	○	○	○※7	○※7	○※7	×
Flange shape		FF flange	●	●	●	●	●	●	●※5
	R	RF flange	○	○	○	○	○	○	○
Auxiliary symbol		Without auxiliary symbol	●	●	●	●	●	●	●
	Z06	Zero resettable register type	○	○	○	○	○	○	○

- Note) 1. Omit symbol if the column of specification code is blank.  
 2. When you selected the counter symbol "H", select "Without pulse generator" for both type of transmitter and pulse unit.  
 3. When select "Z" for symbol of counter unit, add "Z06" as supplementary symbol.  
 ※1: Nominal size symbol 20, Capacity symbol A become C3604BD, and Nominal size symbol 50, Capacity symbol B become CAC406.  
 ※2: Nominal size symbol 50, Capacity symbol B become SUS304  
 ※3: Manufacturable in case of 110P/s or less  
 ※4: Manufacturable in case of 5P/s or less  
 ※5: When you selected the flange standard symbol 20 or AS3, cannot select Flange shape symbol FF.  
 ※6: Flame proof enclosure is available only in case of reed switch pulse output.  
 ※7: This is manufactured only in case of material symbol S7.

▼ The contents given here are subject to change without notice.

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