



WATER SUPPLY FLOW METER

SPECIFICATIONS

SST40151 17.02

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

Specification of measuring unit

Nominal size symbol			20		25		40		50			
volume symbol			A		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℃ or less					High-temperature : 110 ~ 200℃				
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℃) MPa			
			5K	JIS5K			FB/F7/S7		0.5			
			10K	JIS10K, ANSI class150					1.0			
			20K	JIS20K, ANSI class300					2.5			

Specification of counter unit

Specification of counter unit				20	25	40	50		
Nominal size symbol									
Volume symbol				A	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			
			Volume/rev.	10 L		100 L			
		Total counter	Indication unit	10 L		100 L			
			No. of digits	5 (99,999 x 10L)		5 (99,999 x 100L)			
	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 ³ /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)

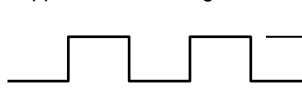
Nominal size & volume symbol	One rev. of pointer	Pulse unit					
		10mL/P	100mL/P	1L/P	10L/P	100L/P	1m ³ /P
20A	10L	—	○	○	○	—	—
25A	100L	—	—	○	○	○	—
25B	100L	—	—	○	○	○	—
40A	100L	—	—	○	○	○	—
40B/50A	100L	—	—	○	○	○	—
50B	100L	—	—	○※2	○	○	—

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

●High frequency pulse generator (Symbol : M)

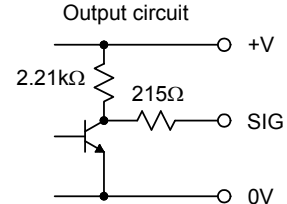
Output signal: Voltage no-contact pulse

Approximate rectangular wave



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)

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)

●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

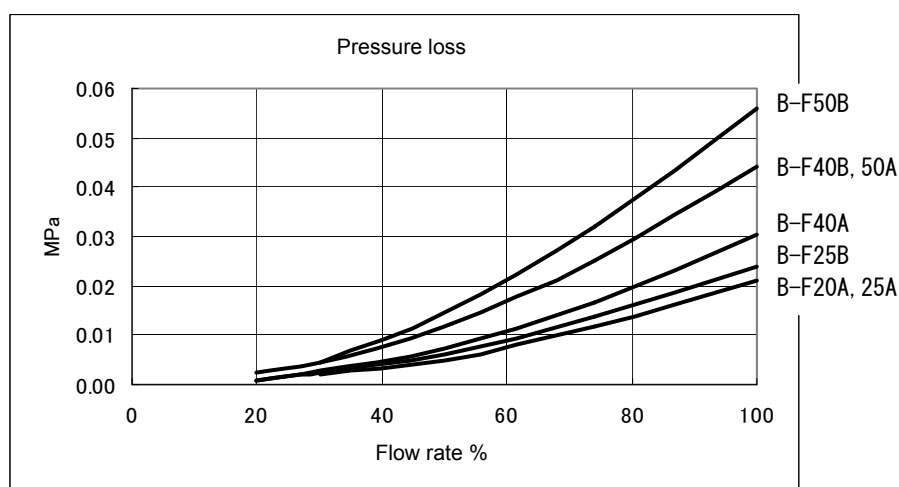
4. Flow range (m³/h)

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 : 20A ~ 50B



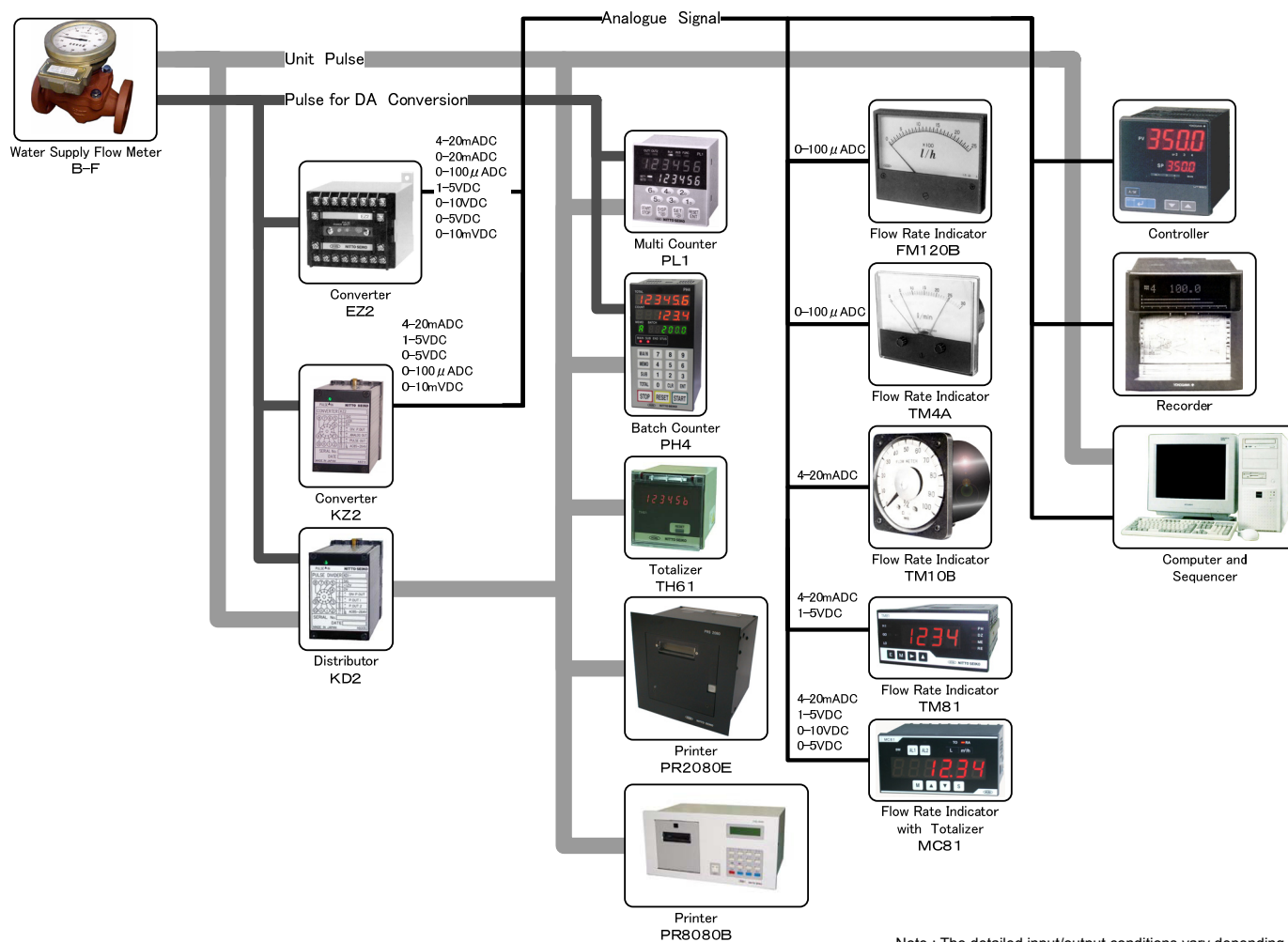
Nominal size & volume symbol	Flow rate 100%
20A	1.5 m ³ /h
25A	2.5 m ³ /h
25B	5.0 m ³ /h
40A	7.0 m ³ /h
40B	15.0 m ³ /h
50A	15.0 m ³ /h
50B	25.0 m ³ /h

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

Nominal size & volume symbol	Material symbol	JIS		ANSI	
		10K	20K	class150	class 300
20A	FB	225	225		
25A	FB・F7	225	225	225	225
25B	S7	225	225	225	229
40A	FB・F7	245	250	245	
40B	S7	245	245	245	253
50A	FB・F7	245	250	245	
	S7	245	245	245	253
50B	FB・F7	250	254	250	

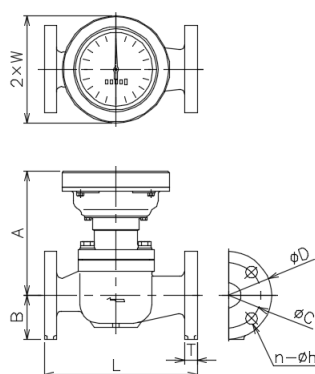
Process connection shown by blank column can not be manufactured.

7. Remote measurement system



Note : 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

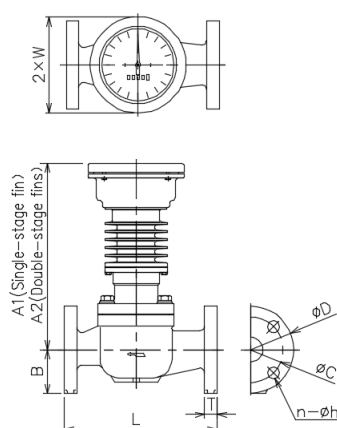
Nominal size symbol & Capacity symbol	Nominal size	Flange standard	L		A	B	W	D	T		C	n	h	Weight (kg)
			FCD	SCS					FB/F7	S7				
20A	20	JIS10K JIS20K	225	—	191	50	86	100	18	—	75	4	15	8.5
25A 25B	25	JIS10K JIS20K	225	225	191	62.5	86	125	20	16	90	4	19	9.4
40A 40B	40	JIS10K JIS20K	245	245	200	70	86	140	20	18	105	4	19	12.8 13.2
50A	50	JIS10K JIS20K	245	245	200	77.5	86	155	20	18	120	4 8	19	14.5 15.0
50B	50	JIS10K JIS20K	250 254	—	203	77.5	86	155	20 22	—	120	4 8	19	15.4 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 JIS20K	225	—	290	389.5	50	77	100	18	—	75	4	15	9.3
25A 25B	25	JIS10K JIS20K	225	225	290	389.5	62.5	77	125	20	16	90	4	19	10.2
40A 40B	40	JIS10K JIS20K	245	245	299	398.5	70	77	140	20 22	18	105	4	19	13.6 14.0
50A	50	JIS10K JIS20K	245	245	299	398.5	77.5	77	155	20 22	18	120	4 8	19	15.3 15.8
50B	50	JIS10K JIS20K	250 254	—	302	402	77.5	77	155	20 22	—	120	4 8	19	16.2 16.8

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



● Pulse generator type

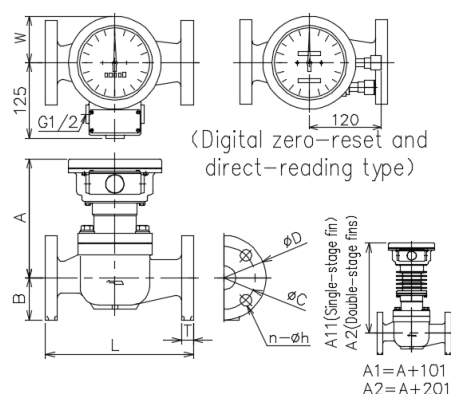
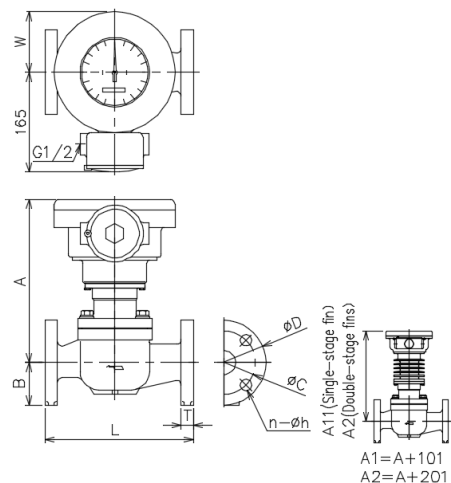
Nominal size symbol & Capacity symbol	Nominal size	Flange standard	L		A	B	W	D	T		C	n	h	Weight (kg)
			FCD	SCS					FB/F7	S7				
20A	20	JIS10K JIS20K	225	—	189	50	77	100	18	—	75	4	15	8.9
25A 25B	25	JIS10K JIS20K	225	225	189	62.5	77	125	20	16	90	4	19	9.8
40A 40B	40	JIS10K JIS20K	245	245	198	70	77	140	20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

A1=A+101
A2=A+201A1=A+101
A2=A+201

● Explosion-proof type

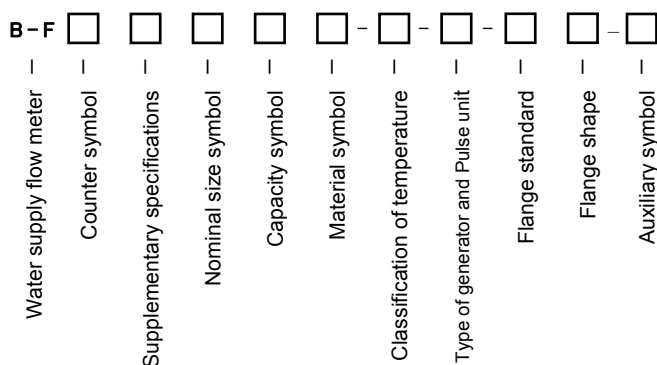
Nominal size symbol & Capacity symbol	Nominal size	Flange standard	L		A	B	W	D	T		C	n	h	Weight (kg)
			FCD	SCS					FB/F7	S7				
25A 25B	25	JIS10K JIS20K	225	225	263	62.5	100	125	20	16	90	4	19	14.9
40A 40B	40	JIS10K JIS20K	245	245	272	70	100	140	20 22	18	105	4	19	18.3 18.7
50A	50	JIS10K JIS20K	245	245	272	77.5	100	155	20 22	18	120	4 8	19	20.0 20.5
50B	50	JIS10K JIS20K	250 254	—	275	77.5	100	155	20 22	—	120	4 8	19	20.9 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 of description are subject to change without notice.

**NITTO SEIKO CO., LTD.**

30 Nogamihata, Nobu-Cho, Ayabe, Kyoto 623-0041, JAPAN

TEL : +81-773-43-1412

FAX : +81-773-43-1595

E-mail:sales@nittoseiko.co.jp

http://www.nittoseiko.co.jp/