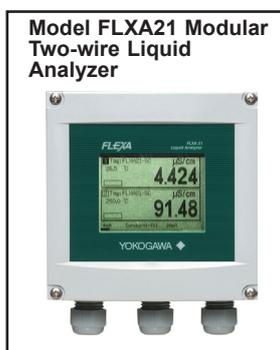
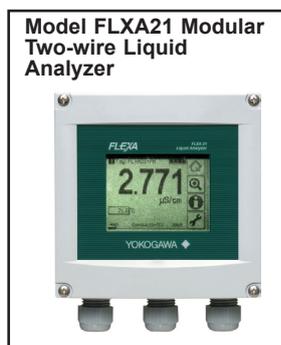


## ■ Conductivity / Resistivity Analyzers



## ■ Inductive Conductivity Analyzers



(\*1) Model SC202SJ, ISC202SJ and ISC40SJ are available only in Japan.

## ■ Conductivity Sensor Selection Guide and Compatible Instruments

	2-Electrode System					
Model Name	SC4AJ-□-□□-□□-002	SC4AJ-□-□□-□□-010	SC10XB	SC8SG-R31-T	SC8SG-R61-T	
<b>Specifications</b>						
Cell constant	0.02 cm <sup>-1</sup>	0.1 cm <sup>-1</sup>	0.05 cm <sup>-1</sup>	0.01 cm <sup>-1</sup>	10 cm <sup>-1</sup>	
Minimum measuring range	0 to 0.5 μS/cm 0 to 100 μS/cm* <sup>1</sup>	0 to 5 μS/cm 0 to 500 μS/cm* <sup>2</sup>	0 to 200 μS/cm	0 to 0.5 μS/cm	0 to 1 mS/cm	
Maximum measuring range	0 to 200 μS/cm 0 to 1000 μS/cm* <sup>1</sup>	0 to 1000 μS/cm 0 to 5000 μS/cm* <sup>3</sup>	0 to 2000 μS/cm	0 to 100 μS/cm	0 to 1000 mS/cm	
Process temperature	0 to 110 °C	0 to 110 °C	0 to 70 °C	0 to 100 °C	0 to 100 °C	
Process pressure	0 to 1 MPa	0 to 1 MPa	0 to 500 kPa	0 to 1 MPa* <sup>4</sup>	0 to 1 MPa* <sup>4</sup>	
Cable length	3/5/10/15/20 m No extension cable available		3/5/10 m Extension cable* <sup>5</sup>	5.5/10/20 m No extension cable available		
Installation	Adapter mounting type Welding socket type Clamp type		Drop-in type Piping connection with optional adapter	Screw-in type Flow-through type (screw) Flow-through type (flange)		
<b>Applications</b>						
High purity water (0.1-50 μS/cm)	A	B	X	A	X	
Tap water, industrial water	B	A	B	X	B	
Industrial effluent, sewage	X	X	X	X	B	
Acid/alkaline solution, brackish water, seawater	X	X	X	X	X	
Food processing plant (interface detection)* <sup>6</sup>	X	X	X	X	X	
Food processing plant (control of cleaning chemicals)	X	X	X	X	X	
<b>Converter/Transmitter Compatibility</b>						
SC450G 4-Wire Conductivity/Resistivity Converter	B	B	X	B	B	
FLXA21/SC202G 2-Wire Conductivity/Resistivity Transmitter	B	B	X	B	B	
SC202SJ 2-Wire Conductivity/Resistivity Transmitter	B	B	X	B	B	
SC202S 2-Wire Conductivity/Resistivity Transmitter	B	B	X	B	B	
ISC450G 4-Wire Inductive Conductivity Converter	X	X	X	X	X	
FLXA21/ISC202G 2-Wire Inductive Conductivity Transmitter	X	X	X	X	X	
ISC202SJ 2-Wire Inductive Conductivity Transmitter	X	X	X	X	X	
ISC202S 2-Wire Inductive Conductivity Transmitter	X	X	X	X	X	

Rating: A=Recommended, B=Applicable, X=Not applicable

\*1: Measuring range when used in conjunction with SC100 Panel Mount Conductivity Converter. In this case, only titanium sensor can be used.

\*2: Minimum measuring range when used in conjunction with SC100.

\*3: Maximum measuring range when titanium sensor is used in conjunction with SC100.  
Maximum measuring range when SUS316L sensor is used in conjunction with SC100 is 0 to 1000 μS/cm.

\*4: In case of PP (polypropylene) chamber, process pressure range is 0 to 500 kPa.

\*5: Total length including extension cable should not exceed 50 m.

\*6: Use SC500 Sanitary Conductivity Converter. SC500 is available only in Japan.

## ■ Conductivity Converter / Transmitter Selection Guide

Model Name	SC450G	FLXA21/SC202G	SC202SJ * <sup>1</sup>	SC202S	
Product Name	4-Wire Conductivity/Resistivity Converter	2-Wire Conductivity/Resistivity Transmitter	2-Wire Conductivity/Resistivity Transmitter	2-Wire Conductivity/Resistivity Transmitter	
<b>Installation Site</b>					
Indoors	B	B	B	B	
Outdoors (non-hazardous area)	B	B	B	B	
Outdoors (hazardous area)	X	X	A	A	
<b>Application</b>					
For integration, small-scale instrumentation	B				
General purpose, medium-scale instrumentation	A	B	B	B	
Remotely located instrument panel room		A	A	A	

Rating: A=Recommended, B=Applicable, X=Not applicable

\*1: This product is TIIS Intrinsically Safe type and available only in Japan

2-Electrode System		4-Electrode System		Inductive Conductivity System			
SC210G-A	SC210G-B	SC85G-R61-F		ISC40GJ	ISC40SJ	ISC40S	Model Name
<b>Specifications</b>							
0.05 cm <sup>-1</sup>	5 cm <sup>-1</sup>	10 cm <sup>-1</sup>					Cell constant
0 to 0.5 μS/cm	0 to 200 μS/cm	0 to 1 mS/cm		0 to 100 μS/cm	0 to 100 μS/cm	0 to 100 μS/cm	Minimum measuring range
0 to 200 μS/cm	0 to 20 mS/cm	0 to 1000 mS/cm		0 to 1999 mS/cm	0 to 1999 mS/cm	0 to 1999 mS/cm	Maximum measuring range
0 to 100 °C	0 to 100 °C	0 to 100 °C		-10 to 130 °C	-10 to 130 °C	-10 to 130 °C	Process temperature
0 to 1 MPa*4	0 to 1 MPa*4	0 to 1 MPa*4		0 to 2 MPa	0 to 2 MPa	0 to 2 MPa	Process pressure
3/5/10/15/20 m No extension cable available		5.5/10/20 m No extension cable available		5/10/15/20 m Extension cable*5	5/10/15/20 m No extension cable available	5/10/15/20 m No extension cable available	Cable length
Screw in type Flange type Flow-through type (screw or flange) Screw in type with gate valve		Screw-in type Flow-through type (screw) Flow-through type (flange)		with optional screw-in adapter with optional flange adapter with optional immersion type holder			Installation
<b>Applications</b>							
	B	X	X	X	X	X	High purity water (0.1-50 μS/cm)
	B	A	B	B	B	B	Tap water, industrial water
	X	B	A	A	A	A	Industrial effluent, sewage
	X	X	X	A	A	A	Acid/alkaline solution, brackish water, seawater
	X	X	X	X	X	X	Food processing plant (interface detection)*6
	X	X	X	A	A	A	Food processing plant (control of cleaning chemicals)
<b>Converter/Transmitter Compatibility</b>							
	B	B	B	X	X	X	SC450G 4-Wire Conductivity/Resistivity Converter
	B	B	B	X	X	X	FLXA21/SC202G 2-Wire Conductivity/Resistivity Transmitter
	B	B	B	X	X	X	SC202SJ 2-Wire Conductivity/Resistivity Transmitter
	B	B	B	X	X	X	SC202S 2-Wire Conductivity/Resistivity Transmitter
	X	X	X	B	X	X	ISC450G 4-Wire Inductive Conductivity Converter
	X	X	X	B	X	X	FLXA21/ISC202G 2-Wire Inductive Conductivity Transmitter
	X	X	X	X	A	X	ISC202SJ 2-Wire Inductive Conductivity Transmitter
	X	X	X	X	X	A	ISC202S 2-Wire Inductive Conductivity Transmitter

Rating: A=Recommended, B=Applicable, X=Not applicable

\*1: Measuring range when used in conjunction with SC100 Panel Mount Conductivity Converter. In this case, only titanium sensor can be used.

\*2: Minimum measuring range when used in conjunction with SC100.

\*3: Maximum measuring range when titanium sensor is used in conjunction with SC100.

Maximum measuring range when SUS316L sensor is used in conjunction with SC100 is 0 to 1000 μS/cm.

\*4: In case of PP (polypropylene) chamber, process pressure range is 0 to 500 kPa.

\*5: Total length including extension cable should not exceed 50 m.

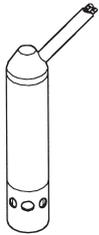
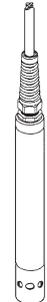
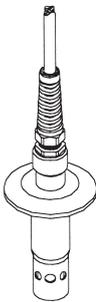
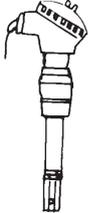
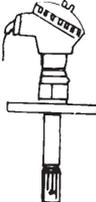
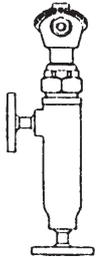
\*6: Use SC500 Sanitary Conductivity Converter. SC500 is available only in Japan.

ISC450G	FLXA21/ISC202G	ISC202SJ *1	ISC202S	Model Name
4-Wire Inductive Conductivity Converter	2-Wire Inductive Conductivity Transmitter	2-Wire Inductive Conductivity Transmitter	2-Wire Inductive Conductivity Transmitter	Product Name
<b>Installation Site</b>				
B	B	B	B	Indoors
B	B	B	B	Outdoors (non-hazardous area)
X	X	A	A	Outdoors (hazardous area)
<b>Application</b>				
B				For integration, small-scale instrumentation
A	B	B	B	General purpose, medium-scale instrumentation
	A	A	A	Remotely located instrument panel room

Rating: A=Recommended, B=Applicable, X=Not applicable

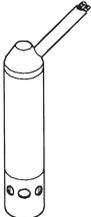
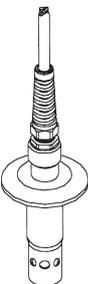
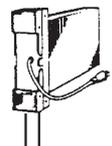
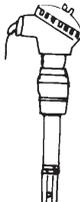
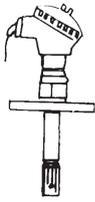
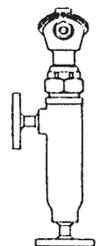
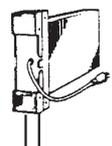
\*1: This product is TIIS Intrinsically Safe type and available only in Japan

## ■ Four-wire Conductivity / Resistivity Analyzers System Configuration

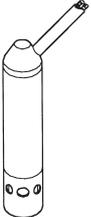
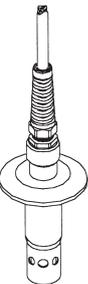
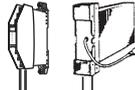
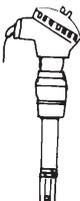
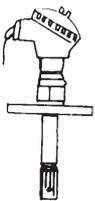
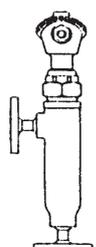
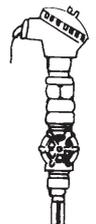
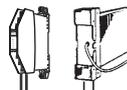
Conductivity Sensors						Conductivity Converter
SC4AJ		SC8SG				SC450G
						
Adapter Mounting Type	Welding Socket Type	Welding Socket Type	Welding Clamp Type	Screw-in Type	Flow-through Type	
SC210G						
						
Screw-in Type	Flange Type	Flow-through Type	Screw-in Type with Gate Valve			

## Two-wire Conductivity / Resistivity Analyzers

### System Configuration – Non-explosionproof type

Conductivity Sensors						Conductivity Transmitter	Distributor
SC4AJ					SC8SG	FLXA21  SC202G 	Dedicated Distributor PH201G  Analog output 1 to 5 V DC Output Failure contact output Maintenance contact output
Adapter Mounting Type		Welding Socket Type	Welding Clamp Type	Screw-in Type	Flow-through Type		
SC210G							General Distributor SDBT, SDBS  Analog output 1 to 5 V DC Output
Screw-in Type	Flange Type	Flow-through Type	Screw-in Type with Gate Valve				

### System Configuration – Explosionproof type

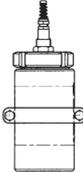
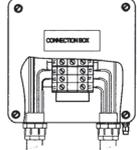
Conductivity Sensors						Conductivity Transmitter	Distributor
SC4AJ					SC8SG	 SC202S <sup>J</sup> *1 Safety Barrier BARD800 Dedicated Distributor PH201G	 Analog output 1 to 5 V DC Output Failure contact output Maintenance contact output
Adapter Mounting Type		Welding Socket Type	Welding Clamp Type	Screw-in Type	Flow-through Type		
SC210G						SC202S <sup>J</sup> *1 Safety Barrier BARD800 General Distributor SDBT	Analog output 1 to 5 V DC Output
Screw-in Type	Flange Type	Flow-through Type	Screw-in Type with Gate Valve				Safety Barrier <sup>*2</sup> Distributor  SC202S <sup>*2</sup>

(\*1) This product is TIIS Intrinsically Safe type and available only in Japan.

(\*2) For intrinsically safe approval, use the safety barrier certified by the testing laboratories. In case of non-incendive type (SC202S-B, -N, -D), the safety barrier is not necessary.

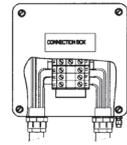
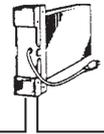
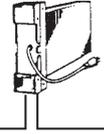
# ■ Four-wire Inductive Conductivity Analyzer

## System Configuration

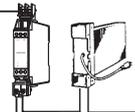
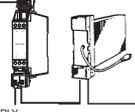
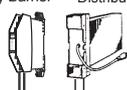
Inductive Conductivity Sensor	Holders	Inductive Conductivity Converter
 <p>ISC40GJ</p>	<p>Immersion ISC40FDJ</p>  <p>Flow-Through ISC40FFJ</p>  <p>Direct Insertion ISC40FSJ</p>  <div data-bbox="805 573 1034 1171"><p>Terminal Box</p><p>Terminal Box BA20</p><p>Extension Cable WF10J</p></div>	<p>ISC450G</p>  <p>EXA-N-450 3.760 mS/cm 23.0 °C YOKOGAWA</p>

## Two-wire Inductive Conductivity Analyzers

### System Configuration – Non-explosionproof type

Inductive Conductivity Sensor	Holders	Inductive Conductivity Transmitter	Distributor
 <p>ISC40GJ</p>	<p>Immersion ISC40FDJ</p>  <p>Flow-Through ISC40FFJ</p>  <p>Direct Insertion ISC40FSJ</p> 	<p>Terminal Box Terminal Box BA20</p>  <p>Extension Cable WF10J</p>  <p>FLXA21</p>  <p>ISC202G</p> 	<p>Dedicated Distributor PH201G</p>  <p>Analog output 1 to 5 V DC Output Failure contact output Maintenance contact output</p> <p>General Distributor SDBT, SDBS</p>  <p>Analog output 1 to 5 V DC Output</p>

### System Configuration – Explosionproof type

Inductive Conductivity Sensor	Holders	Inductive Conductivity Transmitter	Distributor
<p>ISC40SJ-TT<sup>(1)</sup></p>  <hr/> <p>ISC40S</p>	<p>Immersion ISC40FDJ</p>  <p>Flow-Through ISC40FFJ</p>  <p>Direct Insertion ISC40FSJ</p> 	<p>ISC202SJ<sup>(1)</sup></p> 	<p>Safety Barrier BARD820</p> <p>Dedicated Distributor PH201G</p>  <p>SUPPLY</p> <p>Analog output 1 to 5 V DC Output Failure contact output Maintenance contact output</p> <p>Safety Barrier BARD820</p> <p>General Distributor SDBT</p>  <p>SUPPLY</p> <p>Analog output 1 to 5 V DC Output</p> <hr/> <p>Safety Barrier<sup>(2)</sup> Distributor</p>  <p>ISC202S<sup>(2)</sup></p> <p>(<sup>(2)</sup>) For intrinsically safe approval, use the safety barrier certified by the testing laboratories. In case of non-incendive type (ISC202S-B, -N, -D), the safety barrier is not necessary.</p>

(\*1) This product is TIIS Intrinsically Safe type and available only in Japan.

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# Revision Information

- Title : Conductivity Analyzer Selection Guide
- Manual No. : TI 12D08A01-02E

**Oct. 2011/2nd Edition**

SC100 is deleted (termination of product).

**Dec. 2008/1st Edition**

Newly published