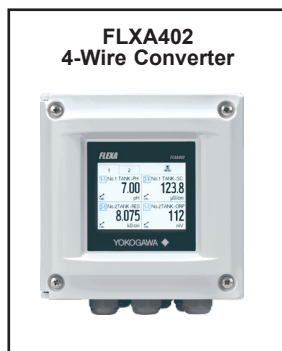
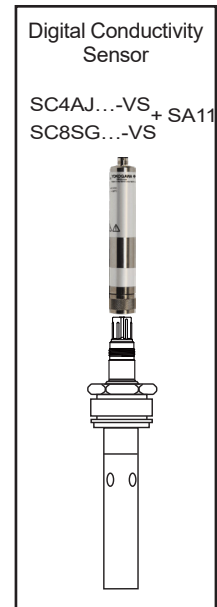


Technical Information

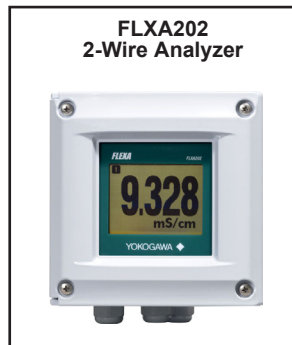
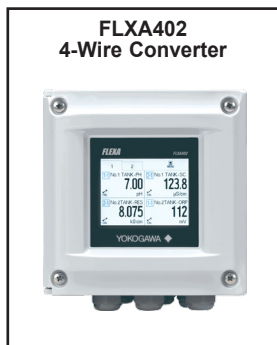
Conductivity Analyzer Selection Guide

TI 12D08A01-02E

■ Conductivity / Resistivity Analyzers



■ Inductive Conductivity Analyzers



*1: Model ISC40SJ is available only in Japan.

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■ Conductivity Sensor Selection Guide and Compatible Instruments

	2-Electrode System					
Model Name	SC4AJ-□-□□-□□-002	SC4AJ-□-□□-□□-010	SC10XB	SC8SG-R31-T	SC8SG-R61-T	
	SC4AJ-□-□□-□□-002-□□-□□-VS+SA11*5	SC4AJ-□-□□-□□-010-□□-□□-VS+SA11*5		SC8SG-R31-T-□□□-VS+SA11*5		

Specifications

Cell constant	0.02 cm ⁻¹	0.1 cm ⁻¹	0.05 cm ⁻¹	0.01 cm ⁻¹	10 cm ⁻¹	
Minimum measuring range	0 to 0.5 μS/cm	0 to 5 μS/cm	0 to 2.0 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	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*1	0 to 1 MPa*1	
Cable length	3/5/10/15/20 m No extension cable available		3/5/10 m Extension cable*2	5.5/10/20 m No extension cable available		
Installation	Adapter mounting type Welding socked type Clamp type		Drop- in type Piping connection with optional adapter	Screw-in type Flow-through type (screw) Flow-through type (flange)		

Applications

High purity water (0.1-50 μS/cm)	A	B	N	A	N	
Tap water, industrial water	B	A	B	N	B	
Industrial effluent, sewage	N	N	N	N	B	
Acid/alkaline solution, brackish water, seawater	N	N	N	N	N	
Food processing plant (interface detection)*3	N	N	N	N	N	
Food processing plant (control of cleaning chemicals)	N	N	N	N	N	

Converter Compatibility

FLXA402 4-Wire Converter (conductivity/resistivity)	B	B	N	B	B	
FLXA202 2-Wire Analyzer (conductivity/resistivity)	B	B	N	B	B	
FLXA21 2-Wire Analyzer (conductivity/resistivity)	B *5	B *5	N	B *5	B	

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

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

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

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

*4: Please refer to General Specification GS 12D06B01-01E or GS 12D08J02-E-E for the process temperature limit when these sensors are used in Hazardous Area.

*5: SA11 (SENCOM Smart Adapter) cannot be used for FLXA21 or does not apply to inductive conductivity.

Note • The table above is for reference purposes only. Consult YOKOGAWA for more selection information.

• See the following references for further selection information:

FLXA402 : GS 12A01F01-01EN, FLXA202: GS 12A01A03-01EN, FLXA21 : GS 12A01A02-01E

SC sensors : GS 12D08G02-E, ISC sensors : GS 12D06B01-01E

2-Electrode System			4-Electrode System	Inductive Conductivity System				
			SC8SG-R61-F	ISC40GJ	ISC40SJ	ISC40G	ISC40S	Model Name
	SC210G-C	SC210G-D	SC8SG-R61-F-□□□-VS+SA11*5					

Specifications

	0.05 cm ⁻¹	5 cm ⁻¹	10 cm ⁻¹					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	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	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*4	-20 to 130 °C (PEEK) -20 to 100 °C (PFA)	-20 to 130 °C (PEEK)*4 -20 to 100 °C (PFA)*4	Process temperature
	0 to 1 MPa*1	0 to 1 MPa*1	0 to 1 MPa*1	0 to 2 MPa	0 to 2 MPa	0 to 2 MPa (PEEK) 0 to 1 MPa (PFA)	0 to 2 MPa (PEEK) 0 to 1 MPa (PFA)	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*2	5/10/15/20 m No extension cable available	5/10/15/20 m Extension cable available	5/10/15/20 m 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 dedicated submersion type holder				Installation

Applications

	B	N	N	N	N	N	N	High purity water (0.1-50 μS/cm)
	B	A	B	B	B	B	B	Tap water, industrial water
	N	B	A	A	A	A	A	Industrial effluent, sewage
	N	N	N	A	A	A	A	Acid/alkaline solution, brackish water, seawater
	N	N	N	N	N	N	N	Food processing plant (interface detection)*3
	N	N	N	A	A	A	A	Food processing plant (control of cleaning chemicals)

Converter Compatibility

	B	B	B	B	N	B	B *6 *8	FLXA402 4-Wire Converter (conductivity/resistivity)
	B	B	B	B	B	B	B *7 *8	FLXA202 2-Wire Analyzer (conductivity/resistivity)
	B	B	B *5	B	N	B	B *7 *8	FLXA21 2-Wire Analyzer (conductivity/resistivity)

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

*6: NI for FM only

*7: IS for FM, CSA, ATEX, IECEx

*8: The cable length should not exceed 50 m.

■ Conductivity Converter Selection Guide

	Model Name	FLXA402	FLXA202	FLXA21
	Product Name	4-Wire converter	2-wire analyzer	2-wire analyzer
Installation site	Indoors	R	A	A
	Outdoors (non-hazardous area)	R	R	R
	Outdoors (hazardous area)	A*	R	R
Application	For integration	A		
	Small-scale instrumentation			
	General purpose Medium-scale instrumentation	R	A	A

Rating: R=Recommended, A=Applicable, N=Not applicable
 *: NI for FM only

■ Four-wire Conductivity / Resistivity Analyzers

● System Configuration

Conductivity Sensors						Conductivity Converter	
<p>SC4AJ*</p> <p>Adapter Mounting Type Welding Socket Type Welding Clamp Type Screw-in Type Flow-through Type</p>					<p>SC8SG*</p> <p>Screw-in Type Flow-through Type</p>		<p>FLXA402 4-Wire Converter</p>
<p>SC210G</p> <p>Screw-in Type Flange Type Flow-through Type Screw-in Type with Gate Valve</p>							

*: Applicable to SA11.

Two-wire Conductivity / Resistivity Analyzers

System Configuration – Non-explosion protected type



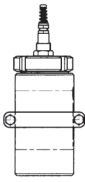
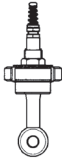
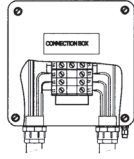


Conductivity Sensors				Conductivity Converter	Distributor
<p>SC4AJ</p> <p>Adapter Mounting Type Welding Socket Type Welding Clamp Type Screw-in Type</p>				<p>FLXA202 / FLXA21</p>	<p>Dedicated Distributor PH201G</p> <p>Analog output 1 to 5 V DC Output Failure contact output Maintenance contact output</p>
<p>SC8SG</p> <p>Screw-in Type Flow-through Type</p>					
<p>SC210G</p> <p>Screw-in Type Flange Type Flow-through Type Screw-in Type with Gate Valve</p>					<p>General Distributor SDBT, SDBS</p> <p>Analog output 1 to 5 V DC Output</p>

System Configuration – Explosion protected type

Conductivity Sensors				Conductivity Converter	Distributor Safety Barrier
<p>SC4AJ</p> <p>Adapter Mounting Type Welding Socket Type Welding Clamp Type Screw-in Type</p>				<p>FLXA202 / FLXA21</p>	<p>Refer to TI 12A01A02-42EN FLXA202 Selection Guide for Intrinsic Safety-type Associated Apparatus.</p> <p>For FLXA21, use TI 12A01A02-42EN as a reference.</p>
<p>SC210G</p> <p>Screw-in Type Flange Type Flow-through Type Screw-in Type with Gate Valve</p>					

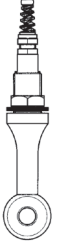

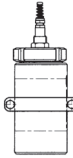
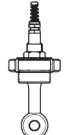
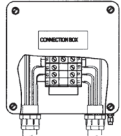


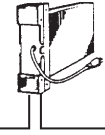
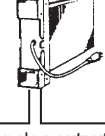
■ Four-wire Inductive Conductivity Analyzer

● System Configuration


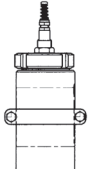
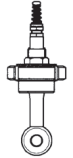

Inductive Conductivity Sensor	Holders	Inductive Conductivity Converter
 <p>ISC40GJ</p>	<p>Immersion ISC40FDJ</p>  <p>Flow-Through ISC40FFJ</p>  <p>Direct Insertion ISC40FSJ</p>  <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>Terminal Box</p> <p>Terminal Box BA20</p>  </div> <p>Extension Cable WF10J</p> 	<p>FLXA402 4-Wire Converter</p> 

■ Two-wire Inductive Conductivity Analyzers

● System Configuration – Non-explosion protected type

Inductive Conductivity Sensor	Holders	Inductive Conductivity Converter	Distributor
 <p>ISC40GJ</p>	<p>Immersion ISC40FDJ</p>  <p>Flow-Through ISC40FFJ</p>  <p>Direct Insertion ISC40FSJ</p>  <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Terminal Box</p> <p>Terminal Box BA20</p>  </div> <p>Extension Cable WF10J</p> 	<p>FLXA202 / FLXA21</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 – Explosion protected type

Inductive Conductivity Sensor	Holders	Inductive Conductivity Converter	Distributor Safety Barrier
<p>ISC40S</p> 	<p>Flow-Through ISC40FFJ</p>  <p>Direct Insertion ISC40FSJ</p> 	<p>FLXA202 / FLXA21</p> 	<p>Refer to TI 12A01A02-42EN FLXA202 Selection Guide for Intrinsic Safety-type Associated Apparatus.</p> <p>For FLXA21, use TI 12A01A02-42EN as a reference.</p>

Revision Information

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

June 2023/8th Edition

SC210G-A, -B changed to SC210G-C, -D.

Jan. 2021/7th Edition

SA11 can be used for FLXA202.

Feb. 2020/6th Edition

FLXA402, SA11 were added. SC450G, ISC450G were deleted.

Aug. 2018/5th Edition

Corrected errors, etc. (page 2, 5, 7)

Jan. 2018/4th Edition

Corrected an error by deleting ISC40FDJ. (table of page 7 System Configuration - Explosion proof)

Dec. 2017/3rd Edition

FLXA202 is added. SC202G, SC202S, SC202SJ are deleted. "Transmitter" was replaced with "Analyzer."

Oct. 2011/2nd Edition

SC100 is deleted (termination of product).

Dec. 2008/1st Edition

Newly published