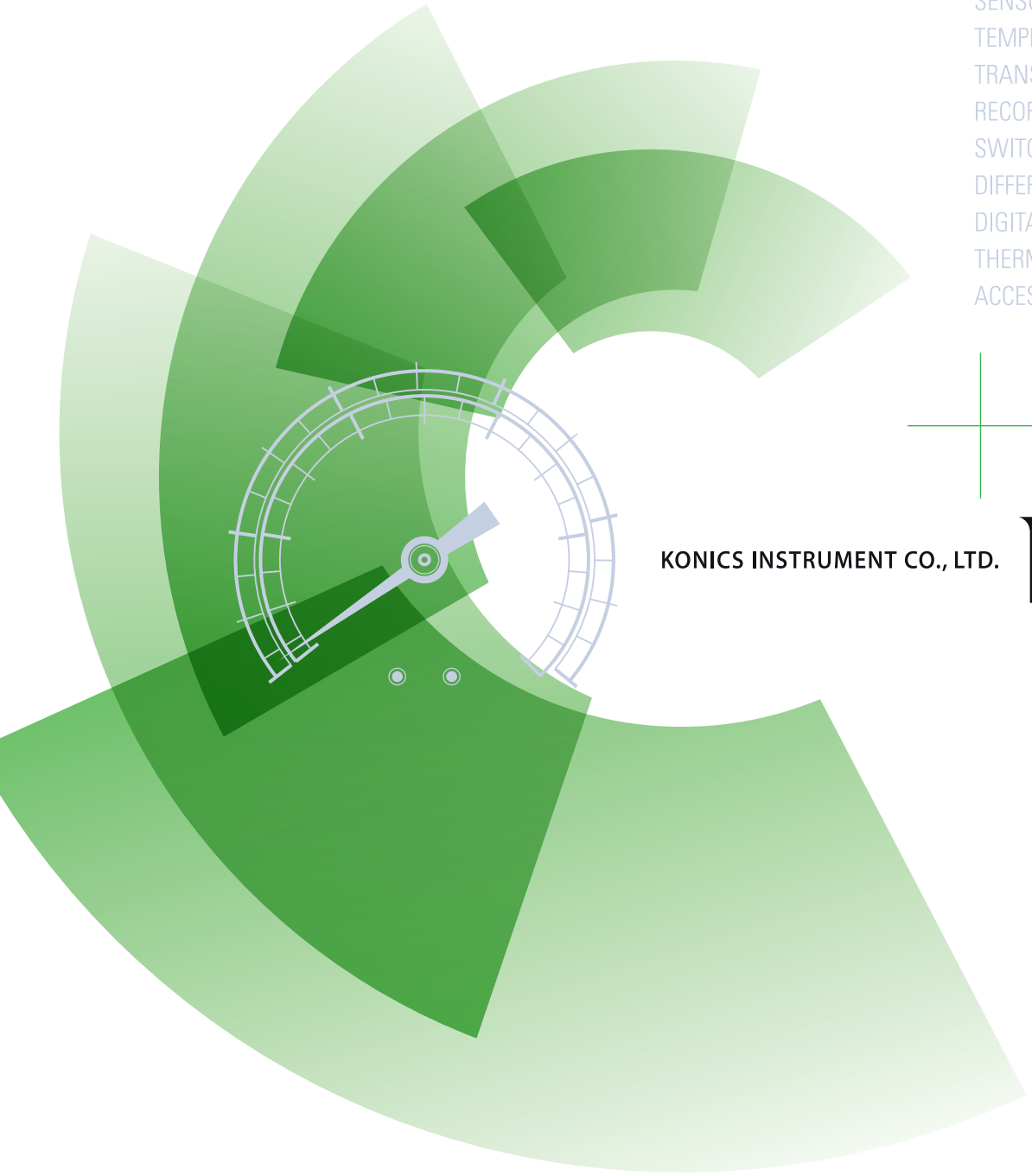
PRESSURE
LEVEL
FLOW
SENSOR
TEMPERATURE
TRANSMITTER
RECORDER
SWITCH
DIFFERENTIAL
DIGITAL INDICATOR
THERMOWELL
ACCESSORIES



KONICS INSTRUMENT CO., LTD.

KINS

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PRESSURE
LEVEL
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ACCESSORIES

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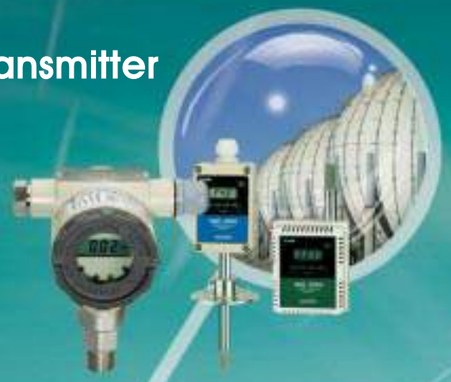
Converter

Transmitter



The power of advanced process!
With us you can achieve.

Pressure Gauge

Konics Instrument Co., Ltd. since founded in 1980, has the know-how in shipbuilding, power plants, petrochemical, construction, textiles and etc., and will become the successful partner of the customer.

Registered ISO 9001:2008

Thermometer

KINS

Specialized company in
process control instruments

Indicator

Pressure/Temperature
Sensors

Beyond your imagination,
Our technology!

Hostory

1980 ~

1987. 07. Established Konics Instrument Co., Ltd.
1988. 09. Licensed as an Instrument Manufacturer by Advancement Administration

1990 ~

1996. 10. Obtained EM Mark for Materials by Korean Agency for Technology and Standard
1998. 12. Obtained EM Mark for Differential Pressure Gauge by Korea Agency for Technology and Standard

2000 ~

2000. 08. Obtained CE Certification for Float Switch
2000. 08. Obtained ISO 9001 Certification
2000. 09. Registered Venture Company
2003. 04. Participated Technical Innovation Project for Small and Medium Sized Enterprises
2005. 09. Obtained “Q” Mark
2006. 08. Registered as a Supplier for KOSEP and Western Power
2007. 01. Registered as a Supplier fir KOMIPO
2008. 07. Registered as a Supplier for KHNP (Korea Hydro Nuclear Power)
2009. 12. Launching New Brand KINS
2010. 07. Obtained CE Mark for Pressure Gauges, Differential Pressure Gauges
2010. 07. Started Jlint R&D Project for Pressure Switch with KHNP

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CONTENTS

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PRESSURE GAUGE

Bourdon-tube gauges are elastic type gauges,
employing a Bourdon-tube element, and are
the most commonly used of all pressure gauges.
They are used almost exclusively for measurements
of fluid pressures. (gauge pressure)

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SS-3010 Series

General Pressure Gauge

Features

- Easy to handle. Rugged Construction
- Precise accuracy measuring range, vibration resistance, shock resistance and other features put Bourdon gauges a step ahead of other type pressure gauges

Applications

- General piping line (Static Pressurized piping, non-corrosive gas piping, steam line and etc.)

Specifications

▶Diameter
- 40, 50, 60, 75, 100, 150, 200 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
	3.0 grade	CL 3.0
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- Ø40, Ø50 : 0~25
- Ø60, Ø75 : -0.1~2, -0.1~0, 0~25
- Ø100 : -0.1~2, -0.1~0, 0~25(100)
- Ø150 : -0.1~2, -0.1~0, 0~100
- Ø200 : 0~10

▶Material
- Case & Cover : Steel(SPCD), Black Coating
- Bourdon Tube : Brass(C2700T)
- Movement : Brass
- Dial : Aluminum
- Connection : Brass(C3604BE)
  - PT, PF ↔ 1/8, 1/4, 3/8, 1/2

Order Code

SS-3011 × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3020 Series

Special Pressure Gauge

Features

- Stainless steel is used for Bourdon-tube, case and connection (High durability for corrosive pressurized fluids)
- Bourdon-tube and connection are Arc-welded (Corrosive resistance is assured in all parts)

Applications

- Corrosive fluids
- Petrochemical plants and etc.
- Pure fluids (no contamination any particle of solid or high viscosity)

Specifications

▶Diameter
- 40, 50, 60, 75, 100, 150, 200 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0
	1.5 grade	CL 1.5
	3.0 grade	CL 3.0
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- Ø40, Ø50 : 0~25
- Ø60, Ø75 : -0.1~2, -0.1~0, 0~25
- Ø100, Ø150 : -0.1~2, -0.1~0, 0~200
- Ø200 : -0.1~2 , -0.1~0, 0~35

▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PT(NPT), PF ↔ 1/8, 1/4, 3/8, 1/2
  - UNF 7/16

Order Code

SS-3021 × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SD-3020 Series

Euro Pressure Gauge(DIN)

Features

- Stainless steel is used for Bourdon-tube, case and connection (High durability for corrosive pressurized fluids)
- Bourdon-tube and connection are Arc-welded (Corrosive resistance is assured in all parts)
- DIN standard is applied

Applications

- Power Plants (Thermal power plants, hydraulic power plant and nuclear power plant)
- Petrochemical plants, ship, food industry and etc.
- Pure fluids (no contain any particle of solid or high viscosity)

Specifications

▶Diameter
- 63, 80, 100, 160 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- Ø63, Ø80 : -0.1~2, -0.1~0, 0~25
- Ø100, Ø160 : -0.1~2, -0.1~0, 0~200

▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PT(NPT), PF ↔ 1/8, 1/4, 3/8, 1/2
  - UNF 7/16

Order Code

SD-3021 × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SF-3020 Series

Solid Front Safety Pressure Gauge

Features

- Enhanced Front durability (High Safety)
- Stainless steel is used for Bourdon-tube, case and connection (High durability for corrosive pressurized fluids)

Applications

- Power Plants(Thermal power plants, hydraulic power plant and nuclear power plant)
- Petrochemical plants, ship, food industry and etc.
- Pure fluids (no contain any particle of solid or high viscosity)

Specifications

▶Diameter
- 100, 125, 160 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	0.5 grade	CL 0.5
	1.0 grade	CL 1.0
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE

▶Scale Range / [unit : MPa]
- Ø100, Ø160 : -0.1~2 to -0.1~0 to 0~200
- Ø125 : -0.1~2 to -0.1~0 to 0~100

▶Material
- Case & Cover : STS 304, Phenolic Resin(Ø100)
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PT(NPT), PF ↔ 3/8, 1/2

Order Code

SF-3021 × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3025~8 Series

Pressure Gauge with Electric Conact

Features

- Generate electric signal of setting pressure for local reading

Applications

- Pressure control, alarm system
- Oil-hydraulic press
- Industrial special fluid line

Specifications

▶Diameter
- 100, 150 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- Ø100, Ø150 : -0.1~2 to -0.1~0 to 0~100

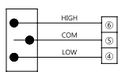
▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PT(NPT), PF ↔ 1/4, 3/8, 1/2

▶Rated Voltage and current of Contact
- AC 110V 0.5A / 220V 0.25A

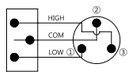
▶Contact from
- SPST*1, SPST*2
- High, Low, High/Low 2-contact
  (High or Low, High & High, High & Low, Low & Low)

Connection Diagram

- Terminal Type



- Connector Type



SS-3030 Series

Diaphragm Seal Type Pressure Gauge

Features

- Suitable for easy freezing fluid (Where the process medium might freeze or solidify in the instrument connection and pressure sensing element due to ambient or process temperature change.)

Applications

- Petrochemical fluid and corrosive fluid
- Powder containing fluid (cement manufacturing line, paper manufacturing line and etc.)
- High temperature/viscosity fluid and Industrial special fluid line

Specifications

▶Accuracy & Mounting Type

Item	Classification		Mark
Accuracy	1.0 grade		CL 1.0
	1.5 grade		CL 1.5
Mounting Type	Direct connection type	Screw-type	SS-3031, 3055
		Flange-type(2step)	SS-3032, 3056
		Flange-type(3step)	SS-3033
	Capillary type	Screw-type	SS-3034
		Flange-type(2step)	SS-3035
	Direct connection	Screw-type(Welding)	SS-3036

▶Scale Range / [unit : MPa]
- SS-3031/4 : -0.1~2 to -0.1~0 to 0~35
- SS-3032/5 : -0.1~2 to -0.1~0 to 0~10
- SS-3033/6 : -0.1~2 to -0.1~0 to 0~10

▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Upper Flange : STS 304, STS 316
- Under Flange : STS 304, STS 316
- Diaphragm : STS 304, STS 316, Titanium, Tantalum, Teflon(Lining, Coating), Hastelloy, Etc.
- Connection : STS 316

Order Code

SS-3031 × □ × □ × □ × □ × □
- Capillary Length
- Diaphragm Meterial
- Proccess Connection
- Range
- Dia.
- Base Model

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Patent No. 10-2002-0004393

SS-3037 Series

Ring Diaphragm Type Pressure Gauge

Features

- High durability for corrosion and heat
- Pressure measurement of fluid in conduit

Applications

-Oil Pressurized line
-Chemical line
-Power plant
-Sanitary line
-Wastewater line
-pulp and paper manufacturing line

Specifications

▶Diameter
• 100, 150 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0

▶Scale Range / [unit : MPa]
• -0.1~0 to -0.1~2 to 0~2

▶Material
• Case & Cover : STS 304
• Bourdon Tube : STS 304
• Movement : STS 304
• Dial : Aluminum
• Body Flange : STS 304, STS 316
• Side Flange : STS 304, STS 316, C-PVC
• Diaphragm : Viton
• Connection : STS 316

Order Code

SS-3037 × □ × □ × □ × □
- Diaphragm Meterial
- Proccess Connection
- Range
- Dia.
- Base Model

SS-3040 Series

Diaphragm Seal Pressure Gauge for Temp.

Features

-Suitable for melting fluid or high viscosity fluid
-Pressure measurement of fluid in conduit

Applications

-High temperature, High viscosity, High pressure
-Extruder
-Chemical industry

Specifications

▶Diameter
• 100, 150 mm

▶Accuracy & Mounting Type

Item	Classification		Mark
Accuracy	1.0 grade		CL 1.0
	1.5 grade		CL 1.5
Mounting Type	Direct connection type	Ø18×PF3/4	SS-3043
		Ø23.6×PF1	SS-3044
	Capillary Type	Ø18×PF3/4	SS-3047
		Ø23.6×PF1	SS-3048

▶Scale Range / [unit : MPa]
• 0~100

▶Material
• Case & Cover : STS 304
• Movement : STS 304
• Dial : Aluminum
• Diaphragm : STS 316
• Mounting Bolt : SM45C (heat treatment)
• Connection : STS 316

Order Code

SS-3040 × □ × □ × □ × □ × □
- "L" Length & Capillary Length
- Connection
- Range
- Dia.
- Base Model

SS-3050 Series

General Low Pressure Gauge

Features

-Suitable for low pressure (Chamber type element)

Applications

-Low pressure measurement
-Level measurement of tank
-Gas conduit

Specifications

▶Diameter
• 75, 100 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : kPa]
• -30~0 to -5~5 to -10~10 to 0~50

▶Material
• Case & Cover : SS-3051, 3052 Steel(SPCD) Cr-Plating
• Chamber : Phosphor Bronze
• Movement : Brass
• Dial : Aluminum
• Connection : Brass(C3604BE), STS 304
- PT(NPT), PF ↔ 1/4, 3/8, 1/2

Order Code

SS-3050 × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3050S Series

Special Low Pressure Gauge

Features

- Suitable for low pressure (Chamber type element)
- Durable for corrosion

Applications

- Low pressure measurement
- level measurement of tank
- Gas conduit

Specifications

▶Diameter
• 75, 100, 150 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : kPa]
• Ø75 : -5(-30)~0 , -5(-10)~5(10), 0~50
• Ø100 : -2(-50)~0 , -1(-20)~1(20), 0~50
• Ø125 : -0.5(-50)~0 , -0.5(-20)~0.5(20), 0~50

▶Material
• Case & Cover : STS 304
• Chamber : STS 304, STS 316
• Movement : Brass
• Dial : Aluminum
• Connection : STS 316
- PT(NPT), PF ↔ 1/4, 3/8, 1/2

Order Code

SS-3051S × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3055/6 Series

Diaphragm Type Low Pressure Gauge

Features

- Suitable for easy freezing fluid
- Suitable for low pressure (Chamber type element)
- Durable for corrosion

Applications

- Low pressure measurement of slurry in wastewater disposal line
- Low pressure measurementof gas in incinerator and other bad condition line

Specifications

▶Diameter
• 100, 150

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Screw-type	SS-3055
	Flange-type(3step)	SS-3056

▶Scale Range / [unit : kPa]
• SS-3055 : -2(-35)~0, -1(1)~-20(20), 0~35
• SS-3056 : -2(-35)~0, -1(1)~-20(20), 0~35

▶Material
• Case & Cover : STS 304
• Movement : Brass
• Dial : Aluminum
• Upper Flange : STS 304, STS 316
• Under Flange : STS 304, STS 316
• Diaphragm : STS 304, STS 316, Titanium, Tantalum, Teflon(Lining, Coating), Hastelloy, etc.
• Connection : STS 316
- PT(NPT), PF ↔ 3/8, 1/2

Order Code

SS-3031 × □ × □ × □ × □ × □
- Diaphragm Meterial
- Proccess Connection
- Range
- Dia.
- Base Model

SS-3060 Series

Pressure Gauge with Electric Contact

Features

- Generate electric signal of setting pressure for local reading

Applications

- Pressure control, alarm system
- Oil-hydraulic press
- Industrial special fluid line

Specifications

▶Diameter
• 100, 150

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	Indicating 1.5 grade	CL 1.5
	Setting 3.0 grade	CL 3.0
Mounting Type	Bottom Connection, Surface	B-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
• -0.1~2, -0.1~0, 0~35

▶Material
• Case & Cover : Aluminum (powder coating)
• Bourdon Tube : STS 304, STS 316
• Movement : STS 304
• Dial : Aluminum
• Connection : STS 316
- PT(NPT), PF ↔ 3/8, 1/2

▶Rated Voltage and current of Contact
• AC 110V 5A / 220V 3A

▶Contact from
• Micro Contact Type
• SPDT*1, SPDT*2, DPDT*1
(High, Low, High & High, High & Low, Low & Low)

Order Code

SS-3061 × □ × □ × □ × □
- Proccess Connection
- Range
- Contact Point
- Dia.
- Base Model

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SS-3065 Series

Pressure Gauge with Electric Contact

Features

- Generate electric signal of setting pressure for local reading

Applications

- Pressure control, alarm system
- Oil-hydraulic press
- Industrial special fluid line

Specifications

▶Diameter
- 100 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE

▶Scale Range / [unit : MPa]
- -0.1~0, -0.1~2, 0~100

▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316

▶Rated Voltage and current of Contact
- 220V 0.7A/1.0A

▶Contact from
- SPDT*1, SPDT*2
- 2-contact of High(upper limit), Low(lower limit)
  (High or Low, High & High, High & Low, Low & Low)

Order Code

SS-3065 × □ × □ × □ × □
- Proccess Connection
- Range
- Contact Point
- Dia.
- Base Model

SS-3070 Series

Liquid Filled Pressure Gauge

Features

- Filled with oil(Silicon, Glycerin, etc.) (Vibrating impact prevention, lubricating action and rust prevention)

Applications

- Petrochemical plants
- Oil-hydraulic press
- The place where the temperature changes on a large scale.
- Ship, power plant, Industrial, Special fluid line and etc.

Specifications

▶Diameter
- 60, 75, 100, 150 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0
	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- Ø60, Ø75 : -0.1~2, -0.1~0, 0~25
- Ø100, Ø150 : -0.1~2, -0.1~0, 0~200

▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Filling Liquid : Silicone or Glycerine
- Connection : STS 316
  - PT(NPT), PF ↔ 1/8, 1/4, 3/8, 1/2
  - UNF 7/16

Order Code

SS-3071 × □ × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SD-3070 Series

Liquid Filled Pressure Gauge (DIN)

Features

- Filled with oil(Silicon, Glycerin, etc.) (Vibrating impact prevention, lubricating action and rust prevention)
- DIN standard is applied

Applications

- Power plant (Thermal power plants, hydraulic power plant and nuclear power plant)
- Oil-hydraulic press
- Petrochemical plants, oil refining, ship and etc.
- Food industry, special fluid and etc.

Specifications

▶Diameter
- 63, 80, 100, 160 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0
	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- Ø63, Ø80 : -0.1~2, -0.1~0, 0~25
- Ø100, Ø160 : -0.1~2, -0.1~0, 0~200

▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Filling Liquid : Silicone or Glycerine
- Connection : STS 316
  - PT(NPT), PF ↔ 1/8, 1/4, 3/8, 1/2
  - UNF 7/16

Order Code

SD-3071 × □ × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3075~8 Series

Liquid Filled Pressure Gauge

Features

- Filled with oil(Silicon, Glycerin, etc.) (Vibrating impact prevention, lubricating action and rust prevention)

Applications

- Pressure fluid line
- The place where the temperature changes on a large scale.
- The place where the vibration or pulsation are serious
- Compressor, Oil-hydraulic press

Specifications

▶Diameter
- 60, 75, 100 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- -0.1~1, -0.1~0, 0~35

▶Material
- Case & Cover : STS 304
- Bourdon Tube : Brass(C2700T)
- Movement : Brass
- Dial : Aluminum
- Connection : Brass(C3604BE), Cr-Plating
  - PT(NPT), PF ↔ 1/4, 3/8, 1/2

Order Code

SS-3075 × □ × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3080 Series

Receiver Gauge

Features

- Suitable in Air-pressurized line

Applications

- Air-pressure transmitter
- Value of control valve (Open, Close)

Specifications

▶Diameter
- 100, 150 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range
- Linear Scale : 0~100%
- Square Root Scale : 0~100 Root

▶Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PT(NPT), PF ↔ 1/4(Female), 3/8, 1/2

Order Code

SS-3081 × □ × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3090 Series

Duplex Pressure Gauge

Features

- Measurement of the pressure of two places (Two gauges are merged)

Applications

- Train, ship and power plant
- Differential pressure line

Specifications

▶Diameter
- 100 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : MPa]
- 0~0.4 to 0~3.5

▶Material
- Case & Cover : STS 304
- Bourdon Tube : Brass
- Movement : Brass
- Dial : Aluminum
- Connection : STS 316
  - PT(NPT), PF ↔ 1/4, 3/8, 1/2 (Duplex)

Order Code

SS-3091 × □ × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

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SS-3100 Series

Level Pressure Gauge

Features

- Chamber type level pressure gauge

Applications

- Chemical plant, Ship, Fuel storage tank
- Measurement of Liquid level in tank

Specifications

▶ Diameter
- 150 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Remote	Remote-Flange

▶ Scale Range / [unit : MPa]
- Depth of Tank : 1~10(M)

▶ Material
- Case & Cover : STS 304
- Chamber : Phosophor Bronze
- Movement : Brass
- Dial : Aluminum
- Flange : STS 304, STS 316, Other
- Capillary Tube : STS 304 (Max. 10M)

Order Code

SS-3100 × □ × □ × □ × □
- Capillary Length
- Flange Size
- Range
- Dia.
- Base Model

SS-3111 Series

Pressure Recorder Gauge

Features

- Record the pressure change on the chart paper according to time

Applications

- Chemical plant, LPG/LNG Storage tank
- Monitoring or checking of changed pressure

Specifications

▶ Diameter
- 250 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Bottom Connection, Surface	B-TYPE

▶ Scale Range / [unit : MPa]
- 0~5kPa to 0~50kPa
- -0.1~0.1 to -0.1~2, -0.1~0, 0~0.1 to 0~100

▶ Material
- Case & Cover : Aluminum (Black powder coating)
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Connection : STS 316
  - PT(NPT), PF ↔ 3/8, 1/2

▶ Recorder Pen
- 1 Pen type, 2 Pen type

▶ Revolution Time
- Fixing type (windup spring type)
  ~ 10min, 30min
- Control type (Battery type)
  ~ 30min, 1hr, 3hr, 4hr, 12hr, 24hr, 2day, 4day, 7day, 8day, 16day

Order Code

SS-3111 × □ × □ × □
- Recolution Time
- Connection
- Range
- Base Model

SD-3112 Series

Leak Testing Recorder (For Portable)

Features

- Record the pressure change on the chart paper according to time

Applications

- Leakage check in LPG/LNG tank line
- The place existing a risk of explosion
- Gas pipe Line

Specifications

▶ Diameter
- 100 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Portable(Square)	

▶ Scale Range / [unit : kPa]
- 0.4~10, 2~50

▶ Material
- Case & Cover : ENG'G Plastic
- Bellows : Phosophor Bronze
- Movement : Brass
- Connection : Brass (Hose Connector)

▶ Recorder Pen
- 1 Pen type

▶ Revolution Time
- Manual Windup Spring Type (Unpowered)
- 10min/R, 30min/R

▶ Chart Paper
- 100 sheet

Order Code

SS-3112 × □ × □ × □
- Recolution Time
- Connection
- Range
- Base Model

SS-3113 Series

200∅ Leak Testing Recorder

Features

- Record the pressure change on the chart paper according to time

Applications

- Leakage check in LPG/LNG tank line
- The place existing a risk of explosion
- Gas pipe Line

Specifications

▶ Diameter
- 200 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5
Mounting Type	Portable(Square)	

▶ Scale Range / [unit : MPa]
- 0~50kPa
- -0.1~0.1 to 2, -0.1~0, 0~0.1 to 100

▶ Material
- Case & Cover : Aluminum (Powder coating)
- Bourdon Tube : STS 304
- Movement : Brass
- Connection : Brass, Cr-Plating
  - PT ↔ 3/8

▶ Recorder Pen
- 1 Pen type

▶ Revolution Time
- Fixing type (windup spring type)
  ~ 10min, 30min
- Control type (Battery type)
  ~ 30min, 1hr, 3hr, 4hr, 12hr, 24hr, 2day, 4day, 7day, 8day, 16day

Order Code

SS-3113 × □ × □ × □
- Recolution Time
- Connection
- Range
- Base Model

SS-3120 Series

Test Pressure Gauge

Features

- Suitable for high accurate pressure measurement or proofreading reference.

Applications

- Laboratory, Standard system
- High accurate pressure measurement
- Proofreading and inspection of pressure gauge

Specifications

▶ Diameter
- 150, 200 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	0.5 grade	CL 0.5
Mounting Type	Bottom Connection, Direct	A-TYPE
	Bottom Connection, Surface	B-TYPE
	Back Connection, Direct	D-TYPE
	Back Connection, Flush	BD-TYPE

▶ Scale Range / [unit : MPa]
- -0.1~0, 0~0.1 to 0~100

▶ Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PT(NPT), PF ↔ 1/4, 3/8, 1/2

Order Code

SS-3121 × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

SS-3130 Series

Sanitary Pressure Gauge

Features

- Suitable for easy freezing fluid or powder included fluid
- High durability for corrosion

Applications

- Food manufacturing line
- High temperature, viscosity and pressure fluid line

Specifications

▶ Diameter
- 100 mm

▶ Accuracy

Item	Classification	Mark
Accuracy	1.0 grade	CL 1.0

▶ Mounting Type & Range Scale

Mounting Type	Model	Range Scale (unit : MPa)
Heat radiation type	SS-3131	-0.1~0.1 to 2, 0~0.1 to 70
I type	SS-3132	0~15 to 70
Male screw Movable type	SS-3133	-0.1~0.1 to 2, 0~0.1 to 50
Flange Movable type	SS-3134	-0.1~0.3 to 2, 0~0.1 to 10
Female screw type	SS-3135	-0.1~0.1 to 2, 0~0.1 to 10
Jig type	SS-3136	0~15 to 70
Clamp type	SS-3137	-0.1~0.3 to 2, 0~0.1 to 3.5
Male screw Fixing type	SS-3138	-0.1~0.1 to 2, 0~0.1 to 10
Flange Fixing type	SS-3139	-0.1~0.3 to 2, 0~0.1 to 10

▶ Material
- Case & Cover : STS 304
- Bourdon Tube : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Flange : STS 304, STS 316
- Connection : STS 316
- Diaphragm : STS 304, STS 316, Titanium, Tantalum, Hastelloy, Etc.

Order Code

SS-3131 × □ × □ × □
- Connection
- Range
- Dia.
- Base Model

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SS-3151 Series

Square Type Pressure Gauge

Features

- Good durability by using of a bellows

Applications

- Pressure measurement of general facilities

Specifications

▶ Diameter
• 144 mm × 144 mm × 55.5 mm (Width×Length×Thickness)

▶ Accuracy

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5

▶ Scale Range / [unit : kPa]
• -3~-50, -3~3 to -50~50, 3~50

▶ Material
• Case : Aluminum (Black powder coating)
• Cover : Poly Carbonate
• Movement : Brass
• Dial : Aluminum
• Connection : Brass(C3604BE)
- PT ↔ 1/4

Order Code

SS-3100 × □ × □ × □ × □
- □ : Capillary Length
- □ : Flange Size
- □ : Range
- □ : Dia.
- SS-3100 : Base Model

Patent No. 20-0435022

SS-3301 Series

Differential Pressure Gauge (with Contact)

Features

- Measurement of difference between high and low pressures

Applications

- Measurement of difference between high and low pressures through an orifice line
- Measurement of liquid level in hermitically sealed tank
- Differential pressure application line

Specifications

▶ Diameter
• 100, 150 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 gared	CL 1.5
Mounting Type	Bracket for 2B Pipe Type	

▶ Scale Range
• 0~5kPa to 0~50kPa
• 0~0.1MPa to 0~1MPa

▶ Material
• Case & Cover : STS 304
• Bellows : Brass & STS 304, STS 316
• Movement : STS 304
• Dial : Aluminum
• Connection : STS 316
- PT ↔ 1/4 (Female)

▶ Max. Pressure
• 50 bar

▶ Rated Voltage and current of Contact
• AC 110V 0.5A / 220V 0.25A

Order Code

SS-3301 × □ × □ × □
- □ : Connection
- □ : Range
- □ : Dia.
- SS-3301 : Base Model

Patent No. 20-0435022

SD-3302 Series

Differential Pressure Gauge

Features

- Measurement of difference between high and low pressures

Applications

- Measurement of difference between high and low pressures through an orifice line
- Measurement of liquid level in hermitically sealed tank
- Differential pressure application line

Specifications

▶ Diameter
• 100, 150 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	1.5 gared	CL 1.5
Mounting Type	Bracket for 2B Pipe Type	

▶ Scale Range
• 0~5kPa to 0~50kPa
• 0~0.1MPa to 0~1MPa

▶ Material
• Case & Cover : STS 304
• Bellows : Brass & STS 304, STS 316
• Movement : STS 304
• Dial : Aluminum
• Connection : STS 316
- PT ↔ 1/4 (Female)

▶ Max. Pressure
• 50 bar

Order Code

SS-3302 × □ × □ × □
- □ : Connection
- □ : Range
- □ : Dia.
- SS-3302 : Base Model

KDG-17 Series

Differential Pressure Gauge with Contact

Features

- Measurement of difference between high and low pressures
- Suitable for corrosive fluid and high pressure fluid

Applications

- Indicating, warning and control of tank level
- Indicating, warning or control by using of an orifice line
- Indicating, warning or control of pressure between both sides of filter

Specifications

▶ Diameter
• 150 mm

▶ Accuracy

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5

▶ Scale Range / [unit : MPa]
• 0~5 to 50kPa,
• 0~0.1 to 1

▶ Material
• Case & Cover : Aluminum (Powder coating)
• Element : STS 316
• Movement : STS 304
• Dial : Aluminum
• Connection : STS 316
- PT ↔ 1/4 (Female)

▶ Rated Voltage and current of Contact
• AC 110V 5A / 220V 15A

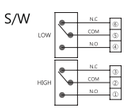
▶ Contact from
• Micro Contact Type
• SPDT*1, SPDT*2
(High, Low, High & High, High & Low, Low & Low)

▶ Max. Pressure
• 50 bar

Connection Diagram

▶ 1 S/W

▶ 2 S/W



Patent No. 0291603

MAGNEIC 2000 Series

Differential Pressure Gauge

Features

- Measurement of difference between high and low pressures

Applications

- Measurement of differential pressure between both sides of air filter
- Differential pressure application line

Specifications

▶ Diameter
• 100 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	Back Connection, Flush	BD-TYPE

▶ Scale Range / [unit : kPa]
• -0.1 to -10 ~ 0.1 to 10, 0~0.2 to 50

▶ Material
• Case & Cover : Aluminum (Powder coating)
• Element : Silicon Rubber, Butile Rubber
• Dial : Aluminum
• Connection : PT 1/8 (Female)

▶ Max. Pressure
• 10 bar

Order Code

MAGNETIC 2000 × □
- □ : Range
- MAGNETIC 2000 : Base Model

MAGNEIC 2010 Series

Differential Pressure Gauge with Switch

Features

- Measurement of difference between high and low pressures
- According to included electric contact signal, generate warning sign (buzzer, bell, Polot-lamp)

Applications

- Indicating, warning or control of pressure between both sides of air filter (Dust collector and etc.)
- Indicating, warning or control of differential pressure application line
- Indicating, warning or control of extremely low pressure, vacuum or compound pressure line

Specifications

▶ Diameter
• 100 mm

▶ Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	Back Connection, Flush	BD-TYPE

▶ Scale Range / [unit : kPa]
• -0.1 to -10 ~ 0.1 to 10, 0~0.2 to 50

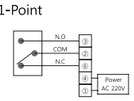
▶ Material
• Case & Cover : Aluminum (Powder coating)
• Element : Silicon Rubber, Butile Rubber
• Dial : Aluminum
• Connection : PT 1/8 (Female)

▶ Max. Pressure
• 10 bar

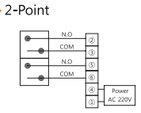
▶ Switch
• Type : 2-SPDT (2-Contact point)
• Volume : 220V AC 10A
• Setting method : External
• DEAD BAND : under 3% of full scale

Connection Diagram

▶ 1-Point



▶ 2-Point



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MAGNEIC 3000 Series

Differential Pressure Gauge

Features

- Measurement of difference between high and low pressures

Applications

- Measurement of differential pressure between both sides of air filter
- Differential pressure application line
- Filter of gas line, Filtering line
  ※ Checking whether the filter is stopped up or not

Specifications

▶Diameter
- 50, 75, 100 mm

▶Accuracy

Item	Classification	Mark
Accuracy	2.0 grade	CL 2.0

▶Scale Range / [unit : kPa]
- 0~50 to 1000

▶Material
- Case : STS 304
- Cover : Rubber
- Dial : Aluminum
- Connection : Aluminum
  - PT ↔ 2-1/4 (Female)

▶Max. Pressure
- Aluminum : 20 MPa
- STS 316 : 40 MPa

Order Code

MAGNETIC 3000 × □ × □
- Range
- Dia.
- Base Model

MAGNEIC 3010 Series

Differential Pressure Gauge with Electirc Contact

Features

- Measurement of difference between high and low pressures
- Generate electric signal of setting pressure for local reading

Applications

- Measurement of differential pressure between both sides of air filter
- Differential pressure application line
- Filter of gas line, Filtering line
  ※ Checking whether the filter is stopped up or not

Specifications

▶Diameter
- 50, 75, 100 mm

▶Accuracy

Item	Classification	Mark
Accuracy	2.0 grade	CL 2.0

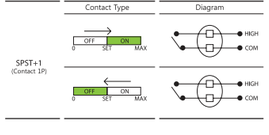
▶Scale Range / [unit : kPa]
- 0~50 to 1000

▶Material
- Case : STS 304
- Cover : Rubber
- Dial : Aluminum
- Element : Viton
- Connection : Aluminum
  - PT ↔ 2-1/4 (Female)

▶Max. Pressure
- Aluminum : 20 MPa

▶Contact From
- SPST*1
- High(1 contact of upper limit), Low(1 contact of lower limit)

Connection Diagram



MAGNEIC 50 Series

Small Differential Pressure Gauge

Features

- Measurement of difference between high and low pressures
- Small size gauge

Applications

- Measurement of differential pressure between both sides of air filter
- Differential pressure application line

Specifications

▶Diameter
- 50 mm

▶Accuracy & Mounting Type

Item	Classification	Mark
Accuracy	5.0 grade	CL 5.0
Mounting Type	Back Connection, Flush	BD-TYPE

▶Scale Range / [unit : kPa]
- 0~0.5 to 50

▶Material
- Case & Cover : Mineral and Glass Filled Nylon
- Element : Silicon Rubber, Butile Rubber
- Dial : Aluminum
- Connection : I·D Ø5 Tube (Barbed Fitting)

▶Max. Pressure
- 0.2 MPa

Order Code

MAGNETIC 50 × □
- Range
- Base Model

Safety Certification Level Ex d IIC T4

KCD-21 Series

Explosion-Protected Pressure Indicating Switch

Features

- Explosion-protected pressure indication switch

Applications

- Indicating, warning or control of pressure in pipe at the explosion risk existed area
- Indicating, warning or control of pressure in LPG/LNG plant
- Indicating, warning or control of pressure in chemical plant

Specifications

▶Accuracy

Item	Classification	Mark
Accuracy	Indication	±1.5% of Full Scale (CL 1.5)
	Setting	±3.0% of Full Scale (CL 3.0)

▶Scale Range / [unit : MPa]
- -0.1~0.1 to 2, -0.1~0, 0~0.1 to 35

▶Material
- Case & Cover : Aluminum (Powder coating)
- Element : STS 304, STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PF, PT, NPT ↔ 1/2

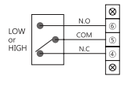
▶Rated Voltage and current of Contact
- 220V 15A

▶Contact from
- SPDT*1, SPDT*2
  (High, Low, High & High, High & Low, Low & Low)

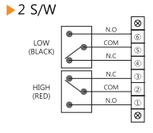
▶Option
- Diaphragm Seal
- Explosion0Protected Cable Gland
- Accerssories

Connection Diagram

▶1 S/W



▶2 S/W



Safety Certification Level Ex d IIC T4

KCD-22 Series

Explosion-Protected Pressure Gauge with Contact (Small Type)

Features

- Explosion-protected pressure Gauge with contact

Applications

- Indicating or warning of pressure in pipe at the explosion risk existed area
- Indicating or warning of pressure in LPG/LNG plant
- Indicating or warning of pressure in chemical plant

Specifications

▶Diameter
- 100 mm

▶Accuracy

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5

▶Scale Range / [unit : MPa]
- 0~5 to 50 kPa
- -0.1~0.1 to 2, -0.1~0, 0~0.1 to 35

▶Material
- Case & Cover : Aluminum (Powder coating)
- Element : Brass, STS 304, STS 316
- Movement : Brass, STS 304
- Dial : Aluminum
- Connection : STS 316
  - PF, PT, NPT ↔ 3/8, 1/2

▶Rated Voltage and current of Contact
- AC 110V 0.5A, AC 220V 0.25A

▶Contact from
- SPDT*1, SPDT*2
  (High, Low, High & High, High & Low, Low & Low)

Connection Diagram

▶1 contact of upper limit(H)

▶1 contact of lower limit(L)

▶1 contact of upper-lower limit(H L)

Safety Certification Level Ex d IIB T5

KCD-23 Series

Explosion-Protected Pressure Gauge with Contact (Small Type)

Features

- Explosion-protected pressure Gauge with contact

Applications

- Indicating or warning of pressure in pipe at the explosion risk existed area
- Indicating or warning of pressure in LPG/LNG plant
- Indicating or warning of pressure in chemical plant

Specifications

▶Diameter
- 100 mm

▶Accuracy

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5

▶Scale Range / [unit : MPa]
- 0~5 to 50 kPa
- -0.1~0.1 to 2, -0.1~0, 0~0.1 to 35

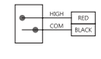
▶Material
- Case & Cover : Aluminum (Powder coating)
- Element : Brass, STS 304, STS 316
- Movement : Brass, STS 304
- Dial : Aluminum
- Connection : STS 316
  - PF, PT, NPT ↔ 3/8, 1/2

▶Rated Voltage and current of Contact
- AC 110V 0.5A, AC 220V 0.25A

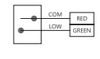
▶Contact from
- SPDT*1, SPDT*2
  (High, Low, High & High, High & Low, Low & Low)

Connection Diagram

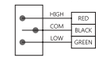
▶1 contact of upper limit(H)



▶1 contact of lower limit(L)



▶1 contact of upper-lower limit(H L)



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Safety Certification Level Ex d IIC T4

KCD-30 Series

Explosion-Protected Pressure Switch

Features

- Explosion-protected pressure indication switch with micro switch
- Diaphragm type switch

Applications

- Indicating or warning of pressure in pipe at the explosion risk existed area
- Indicating or warning of pressure in LPG/LNG plant
- Indicating or warning of pressure in chemical plant

Specifications

▶Pointer Type
- Non-pointer

▶Accuracy
- ±2.0% of Full Scale

▶Scale Range / [unit : kPa/MPa]
- 0~0.5 to 50 (kPa)

▶Material
- Case & Cover : Aluminum (Powder coating)
- Wetted Part : Hastelloy, Titanuim, Monel Tantalum, Etc.
- Connection : STS 316, Other special materials
  - PF, PT, NPT ↔ 3/8, 1/2

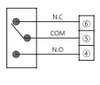
▶Rated Voltage and current of Contact
- AC 220V 15A

▶Contact From
- Micro Contact Type
- SPDT*1, SPDT*2, DPDT*1
  (High, Low, High & High, High & Low, Low & Low)

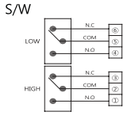
▶Option
- Diaphragm Seal - If Slurry
- 2 Pipe Stanchion
- Accessories

Connection Diagram

▶1 S/W



▶2 S/W



Safety Certification Level Ex d IIB T5

KCD-31 Series

Explosion-Protected Differential Pressure Gauge

Features

- Explosion-protected differential pressure indication switch

Applications

- Indicating, warning or control of tank level at the explosion risk existed area
- Indicating, warning or control of amount of fluid by using of orifice line's differential pressure at the explosion risk existed area
- Indicating, warning or control of differential pressure between both sides of filter at the explosion risk existed area

Specifications

▶Accuracy

Item	Classification	Mark
Accuracy	Indication	±1.5% of Full Scale (CL 1.5)
	Setting	±3.0% of Full Scale (CL 3.0)

▶Scale Range / [unit : kPa/MPa]
- 0~0.5 to 50 (kPa)
- 0~0.1 to 1 (MPa)

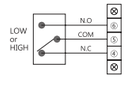
▶Material
- Case & Cover : Alumium (Powder coating)
- Element : STS 316
- Movement : STS 304
- Dial : Aluminum
- Connection : STS 316
  - PF, PT, NPT ↔ 1/2

▶Max. Pressure
- Aluminum : 5 MPa

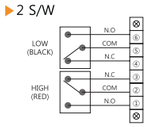
▶Contact From
- Micro Contact Type
- SPDT*1, SPDT*2, DPDT*1
  (High, Low, High & High, High & Low, Low & Low)

Connection Diagram

▶1 S/W



▶2 S/W



Safety Certification Level Ex d IIB T5

KCD-32 Series

Explosion-Protected Pressure Gauge Switch

Features

- Suitable for control of amount, pressure or level of fluid at the explosion risk existed area

Applications

- Indicating, warning or control of pressure of pipe at the explosion risk existed area
- Indicating, warning or control of pressure in LNG/LPG plant
- Indicating, warning or control of pressure in chemical plant

Specifications

▶Pointer Type
- Non-pointer

▶Accuracy
- ±2.0% of Full Scale

▶Scale Range / [unit : kPa/MPa]
- 0~0.5 to 50 (kPa)
- 0~0.1 to 5 (MPa)

▶Material
- Case & Cover : Aluminum (Powder coating)
- Wetted Part : Hastelloy, Titanuim, Monel Tantalum, Etc.
- Element : STS 316
- Connection : STS 316, Other special materials
  - PF, PT, NPT ↔ 3/8, 1/2

▶Rated Voltage and current of Contact
- AC 220V 15A

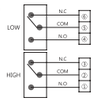
▶Contact From
- Micro Contact Type
- SPDT*1, SPDT*2, DPDT*1
  (High, Low, High & High, High & Low, Low & Low)

▶Option
- Diaphragm Seal
- 2 Pipe Stanchion, Accessories

Connection Diagram

▶1 S/W

▶2 S/W



KCQ-21 Series

Pressure Switch

Features

- Suitable for control of amount, pressure or level of fluid
- Good durability for impact and vibration

Applications

- Measurement of amount of fluid
- Application line of differential pressure

Specifications

▶Size (L×W×T)
- 165mm × 130mm × 60mm

▶Accuracy

Item	Classification	Mark
Accuracy	2.0 grade	CL 2.0

▶Scale Range / [unit : MPa]
- -0.1~0.1 to 2, -0.1~0, 0~0.1 to 35
- 0 ~ 50 (kPa)

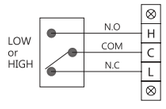
▶Material
- Case & Cover : Aluminum (Powder coating)
- Element : STS 304, STS 316
- Connection : STS 316
  - PF, PT, NPT ↔ 3/8, 1/2

▶Rated Voltage and current of Contact
- AC 110V / 220V 5A

▶Contact From
- Micro Contact Type
- SPDT*1 (High or Low)

▶Type
- Surface Type

Connection Diagram



KCQ-30 Series

Pressure Switch

Features

- Suitable for control of amount, pressure or level of fluid
- Good durability for impact and vibration

Applications

- Control or warning system of fluid
- Oil-hydraulic press, electric generator, petrochemical line
- Special fluid line in industry

Specifications

▶Size (L×W×T)
- 124mm × 127mm × 64mm

▶Accuracy

Item	Classification	Mark
Accuracy	2.0 grade	CL 2.0

▶Scale Range / [unit : MPa]
- -0.1~0.1 to 2, -0.1~0, 0~0.1 to 35
- 0 ~ 50 (kPa)

▶Material
- Case & Cover : Aluminum (Powder coating)
- Element : STS 304, STS 316
- Connection : STS 316
  - PF, PT, NPT ↔ 3/8, 1/2

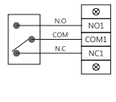
▶Rated Voltage and current of Contact
- AC 110V / 220V 15A

▶Contact From
- Micro Contact Type
- SPDT*1, SPDP*2, DPDT*1
  (High, Low, High & High, High & Low, Low & Low)

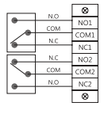
▶Type
- Surface Type

Connection Diagram

▶1 S/W



▶2 S/W



Patent No. 20-2003-0016468

KCQ-2020 Series

Pressure Switch

Features

- Suitable for control of amount, pressure or level of fluid
- Good durability for impact and vibration

Applications

- Control or warning system of fluid
- Oil-hydraulic press, electric generator, petrochemical line
- Special fluid line in industry

Specifications

▶Size (L×W×T)
- 115mm × 90mm × 74mm

▶Accuracy

Item	Classification	Mark
Accuracy	1.5 grade	CL 1.5

▶Scale Range / [unit : MPa]
- -0.1 ~ 0.2 to 1.5

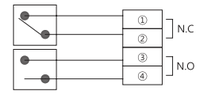
▶Material
- Case & Cover : Steel (SS41, Liquid Painting)
- Element : Brass
- Connection : Brass(C3604BE, Cr-Plating)
  - PT ↔ 3/8

▶Rated Voltage and current of Contact
- AC 110V 12A / 220V 10A

▶Contact From
- Micro Contact Type
- SPDT*1 (High or Low)

▶Type
- Surface Type

Connection Diagram



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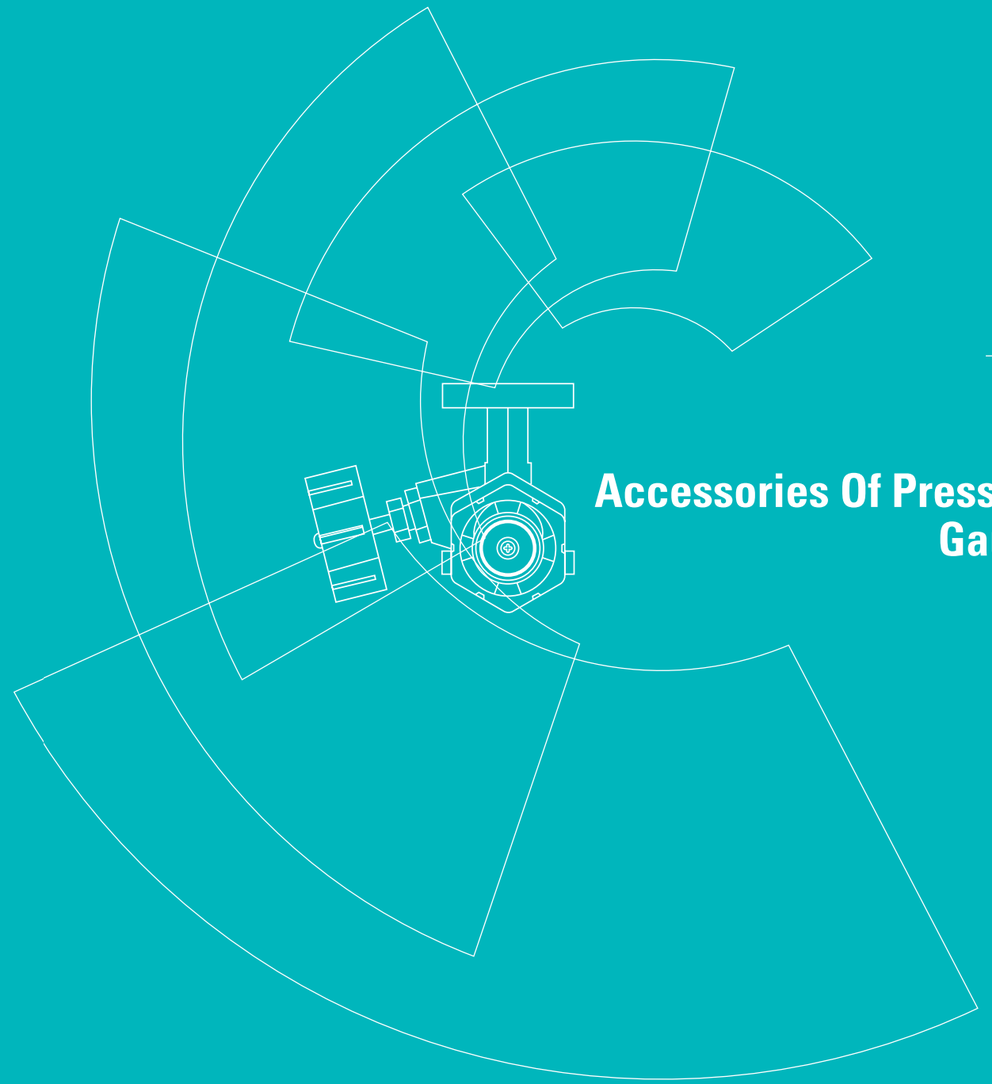

Accessories Of Pressure Gauge

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Cock Valve Series

3-Way Valve

5-Way Valve

Applications

- Linking of valve or cock
- Installation of pressure gauge on panel
- Installation in main steam line

Specifications

▶Material
- Brass
- Stainless Steel

▶Connection

Material	Valve
STS	NPT 1/2

▶Test Pressure
- 25 MPa

▶Max. Working Pressure
- 15 MPa

▶Max. Working Temperature
- 200 ℃

Coil Syphon Series

Coil Pipe Syphon

Coil Pipe Syphon

Applications

- Heat radiation,
- High temperature steam
- Installation in main steam line

Specifications

▶Material
- Steel (Ni-Plating)
- Stainless Steel

▶Type
- Female×Female, Female×Male
  Male×Male
- Female×Flange, Male×Flange
  Flange×Flange

▶Test Pressure
- 30 MPa

▶Max. Working Pressure
- 20 MPa

▶Max. Working Temperature
- 350 ℃

※ Single Coil Type, Double Coil Type,
"L" Type Orders can be made.

Snubber Series

Snubber

Applications

- Filtration system of water and oil
- Recycling of industrial waste water

Specifications

▶Material
- Brass
- Stainless Steel

▶Connection

Material	Gauge	Piping
BS	PF 1/4	PT 1/4
STS	PF 3/8	PF 3/8
	PF 1/2	PF 1/2

▶Test Pressure
- 3 MPa

▶Max. Working Pressure
- 2 MPa

▶Max. Working Temperature
- 200 ℃

Adapter & Union Gauge

Adapter

Union Gauge

Applications

- Connecting between different screws, connecting of pipes
- Installation of pressure gauge on panel

Specifications

▶Material
- Brass
- Steel (Ni 도금)
- Stainless Steel

▶Connection

Material	Gauge	Piping
BS STS	PF / PT 1/4, 3/8, 1/2	PF / PT 1/4, 3/8, 1/2 Pipe Connection

Dampener Series

Dampener

Applications

- Pulsating pressure generation line, Oil inhibited line
- Over-pressure line, Air bubble elimination, Air vent plug

Specifications

▶Material
- Brass
- Stainless Steel

▶Connection

Material	Gauge	Piping
BS	PF 1/4	PT 1/4
STS	PF 3/8	PF 3/8
	PF 1/2	PF 1/2

▶Test Pressure
- 30 MPa

▶Max. Working Pressure
- 20 MPa

▶Max. Working Temperature
- 200 ℃

Tank Syphon Series

Tank Syphon

Applications

- Heat radiation,
- High temperature steam
- High Pressure, Pulsating pressure inhibition
- Test of Liquid(Oil)-filled pressure gauge

Specifications

▶Material
- Steel (Ni-Plating)
- Stainless Steel

▶Connection

Material	Gauge	Piping
STS	PF 3/8	PF 3/8
	PF 1/2	PF 1/2

▶Test Pressure
- 20 MPa

▶Max. Working Pressure
- 15 MPa

▶Tank Capacity
- 120 cc

▶Max. Working Temperature
- 350 ℃

Seal Pot Series

Seal Pot

Applications

- High viscosity liquid
- Inhibit the direct contact between gauge and high temperature liquid
- Fluid's specific gravity changeable line between the lined starting and normal working
- Inhibiting of corrosion
- When the different liquids are existed at the both sides of high and low pressure pipes, make to be same liquid and pressure

Specifications

▶Material
- Steel (Ni-plating)
- Stainless Steel

▶Connection

Material	Gauge	Piping
STS	PF 3/8	PF 3/8
	PF 1/2	PF 1/2

▶Test Pressure
- 20 MPa

▶Max. Working Pressure
- 15 MPa

▶Tank Capacity
- 600 cc

▶Max. Working Temperature
- 350 ℃

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SS-71

Orifice Plates

Specifications

- Type : Concentric Orifice or "edge" type
- Calculation standard :
  According to JIS Z 8762-1969 (ISO 5167)
- Nominal pipe size : 15A-7S0A
  These orifice plates can be manufactured for nominal pipe size up to 3000A
  But in JIS Z 8762-1969, now coefficient for pipe sizes above 760mm is not established.
- Form : Orifice plate with tab handle
- Main material Plates : STS304, STS316, STS410 or SS41
- Connection method
  - Connection flange : JIS 2, S, 10, 20, 30, 40 *63K
    ANSI SIO, 300, 400, 600lb · 350℃

Code Symbols

SS-71

	Description
015 ~ 750	Pipe diameter[mm] 1)
0	None
3	For steel pipe above 500mm diameter
4	For cast iron pipe above 500mm diameter
	Orifice plate material
S	SUS304
W	SUS316
R	SUS410
E	SS41
	Flange standard
Q	JIS 2K
P	JIS 5K
J	JIS 10K
K	JIS 20K
L	JIS 30K
M	JIS 40K
*	JIS 63K
A	ANSI 150Lb
B	ANSI 300Lb
C	ANSI 400Lb
D	ANSI 600Lb
Z	Other flange standard
	TYPE
A	CONCENTRIC
B	QUADRANT
C	ECCENTRIC
D	SEGMENTAL

+ Note)
1) Standard manufacturing range is for pipe diameter up to 750mm
2) DeSignate material SUS304 (code 5) for orifice plates in caseof oil repulsion treatment.

SS-72

Orifice Ass'y (Ring)

Specifications

- Type : Concentric Orifice or "edge" and "quarter cicle"
- Calculation standard :
  According to concentric edge
  JIS Z 8762-1969 (ISO 5167)
- Nominal pipe size : 25A to 300A above
  These orifice plates with annular chambers can be manufactured for nominal pipe size up to 1000A. Type FVB frifice plate is recommended for siezs above 350A.
- Materials of main element :
  - Ring : SS41, SF45, STS304, STS316 or *PVC
  - Orifice plate : STS304, STS316, or *PVC
  - Differential pressure tapping pipe
    : STPG, STS304TP or STS316TP
  - Differntial pressure outlet flange
    : SS41, SF45, STS304 or STS316
- Gasket : Valqua ; No. 1500 or No. 7000 or Teflon
- Connection method
  - Connection flange : JIS 2, 10, 20, 30K
    ANSI 150, 300, 400lb
  - Use single-part orifice plate(type FVE) for flange standard of JIS 40K, ANSI 600lb or higher.
- Differential pressure outlet size
  - PT 1/2 external thread
  - Ø21.7 welded type
  - Flange standard : JIS 5K 15A RF
    JIS 10K 15A RF
    JIS 20K 45A RF
    JIS 30K 15A RF

Code Symbols

SS-72

	Description
0025 ~ 1000	Nominal pipe diameter(A) 2) Enter pipe diameter in 4th to 7th digits
0	Application General use
1	For high pressure
S	Mater of orifice plate SUS304
W	SUS316
*	PVC
	Material of ring / Material of differential pressure tapping pipe
E	SS41 3) / STPG
F	SF45 4) / STPG
S	SUS 304 / SUS 304
W	SUS 315 / SUS 316
*	PVC / PVC
	Flange standard
P	JIS 5K
J	JIS 10K
K	JIS 20K
L	JIS 30K
A	ANSI 150Lb
B	ANSI 300Lb
C	ANSI 400Lb
Z	Other flange standard
	PLATE TYPE
A	CONCENTRIC
B	QUADRANT
C	ECCENTRIC
D	SEGMENTAL

SS-73

Orifice Ass'y (Flange)

Specifications

- Nominal pipe size : 25A to 300A
  These orifice plate can be manufactured for nominal pipe sizes up to 750A
- Main material
  - Flange : SS41, SF45, STS304, STS316
  - Plates with tab handle : STS304, STS316, STS 10, SS41
  - Holding ring : Same material as plates
- Gasket : Valqua : No. 1500 or No. 7000
- Connection method
  - Connection flange : JIS10, 20, 30, 40, *63K RF
    ANSI 150, 300, 400, 600, *900lb RF
    *900, *1500, *2500lb RJ
  - Differential pressure tapping hole : PT 1/2

Code Symbols

SS-73 —

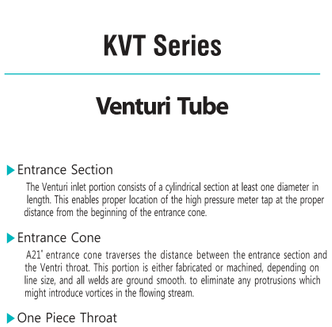
	Description
	CONSTRUCTION
A	WNRF
B	SORF
C	SWRF
D	RTJWRF
	PROCESS CONNECTION
A	Flange Taps
B	Corner Taps
C	Dand 0.5D Taps(Pipe Tap)
D	2.5 Dand 8D Taps
E	Vena Taps
025 ~ 750	Pipe size [mm] 2) Enter pipe size in 5th to 7th digits
0	Application General use
1	For high pressure gas
S	Material of orifice plates SUS304
W	SUS316
R	SUS410
E	SS41
E	Material of flange SS41 3)
F	SF45 4)
S	SUS304
W	SUS316
Y	None

Flange standard

KVT Series

Venturi Tube

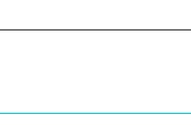
- Entrance Section
  The Venturi inlet portion consists of a cylindrical section at least one diameter in length. This enables proper location of the high pressure meter tap at the proper distance from the beginning of the entrance cone.
- Entrance Cone
  A21° entrance cone traverses the distance between the entrance section and the Ventri throat. This portion is either fabricated or machined, depending on line size, and all welds are ground smooth. to eliminate any protrusions which might introduce vortices in the flowing stream.
- One Piece Throat
  Each DSV Venturi is manufactured with a machined one piece stainless steel throat as standard. The transition from the throat bore to the cone angle is also ma -chined to eliminate deformation of the bore due to welding and grinding of the throat-cone weld. Throats fabricated from rolled plate and throat liners are not recommended due to their effect on accuracy and repeatability. The mach -ined venturi throat is furnished with better than a 50 micro-inch finish to assure optimum performance.
- Exit Cone
  The exit cone is attached to the discharge end of the Venturi throat and is either fabricated or machined with all welds and protrusions ground smooth: Short Form Venturis are furnished with 15° exit cones. 7° exit cones are furnished in the Long Form Venturi.
- Exit Section
  To facilitate field welding and installation, a cylindrical straight section matching the adjacent piping is furnished on all weld-in style venturis.
- Flange
  Flanged venturi tubes are provided with raised face slip-on 150# flanges on each end of the venturi as standard. Raised face weld neck flanges and flanges of other ratings are also available.
- Method of Construction
  In line sizes up to and including 8" all DSV Venturi tubes are machined from round bar material with flanges (if required) welded to each end. All DSV Venturis in line sizes from 10" and above are of fabricated construction.
- Materials of Construction
  Both fabricated and machined Venturi Tubes are available in carbon steel, stainless steel, monel, nickel, or other metals. When required, materials can be furnished as required by the ASME Boiler and Pressure Vessel Code or other piping codes.
- Type of Venturi Tube



KCF Series

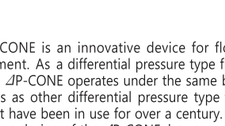
P-Cone Flowmeter

The ⊿P-CONE is an innovative device for flowm -easurement. As a differential pressure type flowme -ter, the ⊿P-CONE operates under the same basic principles as other differential pressure type flowme -ters that have been in use for over a century.
The unique design of the ⊿P-CONE, however, expands the capabilities of differential, pressure flow measur -ement. Over time, the ⊿P-CONE has shown better accuracy, better repeatability, less susceptibility to installation effects, less wear, and wider rangeability. Many applications now use the ⊿P-CONE with fluids including water, steam, air, digester gas, natural gas, nitrogen, and ethanol. ⊿P-CONE are now measuring flowrates with Reynolds numbers up to five million. Others are operating in flow with Reynolds numbers down to eight thousand and below .



- Available of Beta Ratios : 0.45D ~ 0.85D
- Flange Rating
  1. ANSI(JPI) 150#, 300#, 600#, 900#
  2. JIS 10K, 20K, 30K, 40K, 63K
- Material
  1. Carbon Steel
  2. Stainless Steel (304SS, 316SS, etc.)
  3. Monel
  4. Hastelloy-C
  5. Other Material Available
- Type of ⊿P-Cone Flowmeter

FLANGED-END TYPE: DSC-6100
(LINE SIZE OF APPLICATION : 1/2" ~ 36")



INSERT TYPE: DSC-6200
(LINE SIZE OF APPLICATION : 1/2" ~ 72")

KFN Series

Flow Nozzle

- Type of Flow Nozzle
  - Flanged Flow Nozzle : KFN-5100
    This type of flow nozzle has a flange on its upstream face which is installed between pipe flanges to hold the nozzle concentric with the inside of the pipe.
    The nozzle flange can 'be furnished in any type of facing (raised, ring-joint, etc.) as specified. This type flow nozzle -sinside of the pipe. The nozzle flange can 'be furnished in any type of facing(raised, ringjoint, etc.) as specified.
    This type flow nozzles are the type most commonly used for insertion between pipe flanges.
    This type of flow nozzle is designed for pipe wall taps whose locations are determined by Beta ratio and pipe I.D. A shoulder behind the nozzle flange centers the nozzle in the pipeline within required tolerances.
    This type flow nozzle is designed in accordance with AS.ME. specifications.

- WELD-IN FLOW NOZZLE : KFN-5200
  This type nozzle has a machined tongue around it's greatest diameter designed to fit between beveled ends of both an inlet and outlet pipe section. The pipe sections, with the nozzle in place, are firmly clamped and/or tack-welded in alignment before the finish weld is applied. This type weld-in flow nozzle is used where flanges are not applicable such as high temperature and pressure applications in power plant installations, feed water etc. The weld-in nozzle is available with complete flow nozzle flow sections. Pipe wall tons in also used with this type nozzle.

- HODDING RING FLOW NOZZLE : KFN-5300
  This nozzle configuration is another welding type des -igned for installation in a pipe without flanges.
  The nozzle is installed with the curved nozzle inlet facing upstream in a section of carefully selected and iriter- nally bored pipe. This type Holding Ring flow -nozzle eliminates the welding of dissimilar materials because the ring, pins and pipe are of compatible materials.
  Pipe wall taps are also used with this type nozzle.

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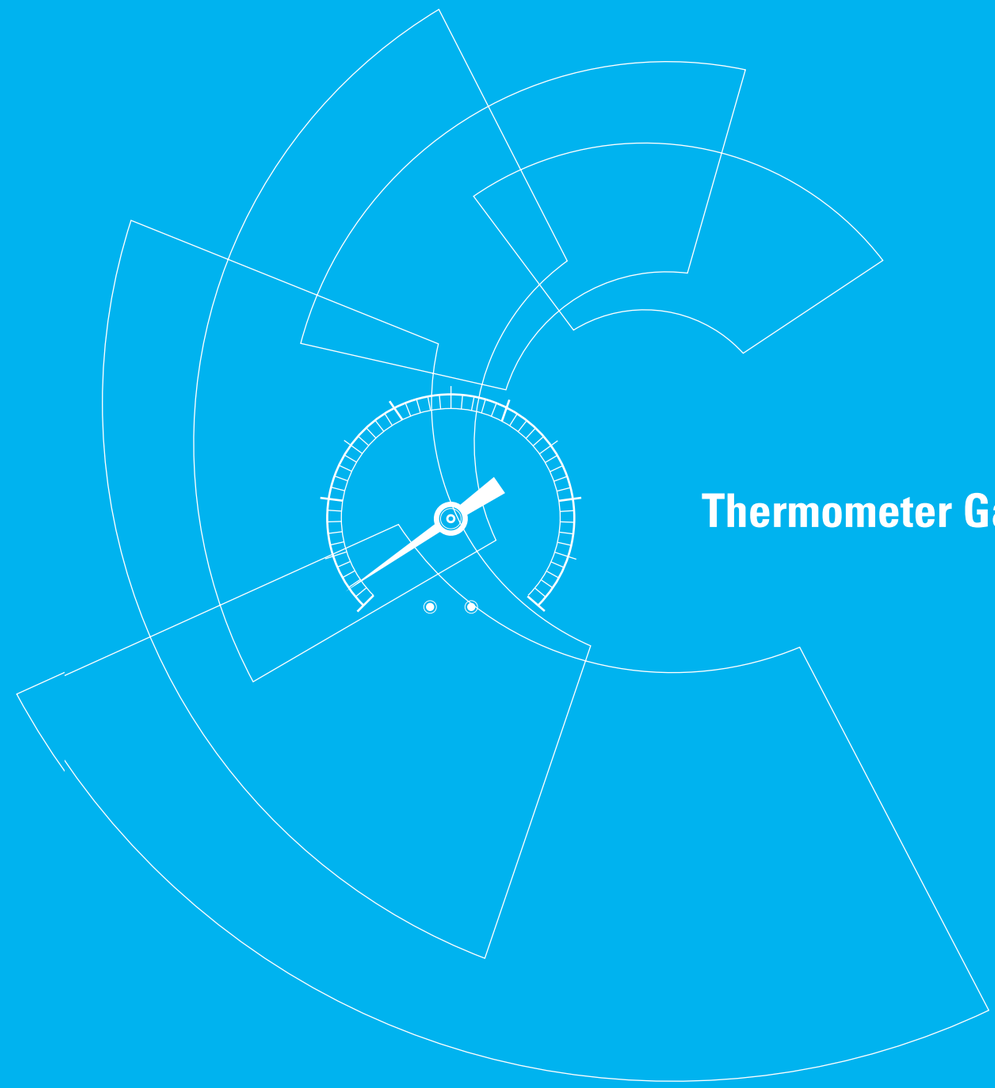

Thermometer Gauge

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SS-4010 Series

Liquid Filled Type Thermometer

Applications

- Boiler, dyeing machine, Petrochemical plant
- Measurement of inner side temperature of tank
- Ship
- LPG/LNG Line

Specifications

▶ Diameter
- 100, 150 mm

▶ Accuracy & Mounting Type

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	Bottom Connection, Surface	B-TYPE
	Back Connection, Flush	BD-TYPE

▶ Scale Range
- -30℃ ~ 650℃

▶ Material
- Case & Cover : STS 304
- Dial : Aluminum
- Stem : STS 304, STS 316
- Connection : STS 304, STS 316
  - PT, PF, NPT ↔ 1/2

▶ Capillary Tube
- Standard 2M (Max. 10M)

Order Code

SS-4011 × □ × □ × □ × □ × □
- Capi'l Length
- Connection
- Stem Dia. & Length
- Range
- Dia.
- Base Model

SS-4020 Series

Liquid Filled Thermometer with Contact

Applications

- Control of temperature, information system
- Boiler, Petrochemical plant
- Transformer

Specifications

▶ Diameter
- 100, 150 mm

▶ Accuracy & Mounting Type

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	Bottom Connection, Surface	B-TYPE
	Back Connection, Flush	BD-TYPE

▶ Scale Range
- -30℃ ~ 650℃

▶ Material
- Case & Cover : STS 304
- Dial : Aluminum
- Stem : STS 304, STS 316
- Connection : STS 304, STS 316
  - PT, PF, NPT ↔ 1/2

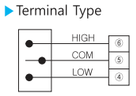
▶ Capillary Tube
- Standard 2M (Max. 10M)

▶ Rated Voltage and current of Contact
- AC 110 / 220V 0.5A

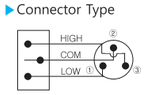
▶ Contact from
- 2-contact of High(upper limit), Low(lower limit)
  (High or Low, High & High, High & Low, Low & Low)

Connection Diagram

▶ Terminal Type



▶ Connector Type



SS-4023 Series

Liquid Filled Thermometer with Contact

Applications

- Control of temperature, information system
- Boiler, Petrochemical plant
- Transformer

Specifications

▶ Diameter
- 100, 150 mm

▶ Accuracy & Mounting Type

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	Bottom Connection, Surface	B-TYPE

▶ Scale Range
- -30℃ ~ 650℃

▶ Material
- Case & Cover : Aluminum (Powder coating)
- Dial : Aluminum
- Stem : STS 304, STS 316
- Connection : STS 304, STS 316
  - PT, PF, NPT ↔ 1/2

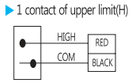
▶ Capillary Tube
- Standard 2M (Max. 10M)

▶ Rated Voltage and current of Contact
- AC 110 / 220V 0.5A

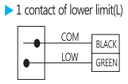
▶ Contact from
- 2-contact of High, Low
  (High or Low, High & High, High & Low, Low & Low)

Connection Diagram

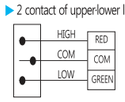
▶ 1 contact of upper limit(H)



▶ 1 contact of lower limit(L)



▶ 2 contact of upper-lower limit(H L)



SS-4025/6 Series

Liquid Filled Thermometer with Micro Contact

Applications

- Control of temperature, information system
- Boiler, Petrochemical plant
- Transforme

Specifications

▶ Diameter
- 100, 150 mm

▶ Accuracy & Mounting Type

Item	Classfication		Mark
Accuracy	Indicating	2.0 grade	CL 2.0
	Setting	3.0 grade	CL 3.0
Mounting Type	Bottom Connection, Surface		B-TYPE
	Back Connection, Flush		BD-TYPE

▶ Scale Range
- -30℃ ~ 650℃

▶ Material
- Case & Cover : Aluminum (powder coating)
- Dial : Aluminum
- Stem : STS 304, STS 316
- Connection : STS 304, STS 316
  - PF, PT, NPT ↔ 1/2

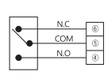
▶ Capillary Tube
- Standard 2M (Max. 10M)

▶ Rated Voltage and current of Contact
- AC 110 / 220V 0.5A

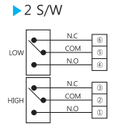
▶ Contact from
- 2-contact of High, Low
  (High or Low, High & High, High & Low, Low & Low)

Connection Diagram

▶ 1 S/W



▶ 2 S/W



SS-4030 Series

Liquid Filled Type Thermometer

Applications

- Boiler, dyeing machine
- Petrochemical plant, Ship
- Measurement of inner side temperature of tank
- LPG/LNG Line

Specifications

▶ Diameter
- 100, 150 mm

▶ Accuracy & Mounting Type

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	I-TYPE	
	T-TYPE	

▶ Scale Range
- -30℃ ~ 650℃

▶ Material
- Case & Cover : STS 304
- Dial : Aluminum
- Stem : STS 304, STS 316 / Union Type
- Connection : STS 304, STS 316
  - PF, PT, NPT ↔ 1/2

Order Code

SS-4031 × □ × □ × □ × □
- Connection
- Stem Dia. & Length
- Range
- Dia.
- Base Model

SS-4041 Series

Recording Thermometer

Applications

- Boiler
- Monitoring, checking and recording of temperature

Specifications

▶ Diameter
- 250 mm

▶ Accuracy & Mounting Type

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	Bottom Connection, Surface	B-TYPE

▶ Scale Range
- -30℃ ~ 600℃

▶ Material
- Case & Cover : Aluminum (Black powder coating)
- Element : STS 304
- Stem : STS 304, STS 316
- Recorder Pen : Aluminum / 1 Pen형, 2Pen형
- Connection : STS 304, STS 316
  - PF, PT, NPT ↔ 1/2

▶ Revolution Time
- Control Type : 30min
  Battery Type : 1, 3, 4, 12, 24 hr / 2, 4, 7, 8, 16 day

▶ Capillary Tube
- Standard 2M (Max. 10M)

Order Code

SS-4041 × □ × □ × □ × □ × □
- Length Time
- Capi'l
- Connection
- Stem Dia. & Length
- Range
- Base Model

SS-4050 Series

Thermometer Switch

Applications

- Control of temperature, information system
- Boiler, Petrochemical plant
- Transformer

Specifications

▶Size (L×W×T)
- 170mm × 135mm × 110mm

▶Accuracy

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0

▶Scale Range
- -30℃ ~ 650℃

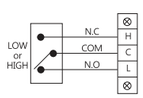
▶Material)
- Case & Cover : Aluminum (powder coating)
- Stem : STS 304, STS 316
- Connection : STS 304, STS 316
  - PT, PF, NPT ↔ 1/2

▶Capillary Tube
- Standard 2M (Max. 10M)

▶Rated Voltage and current of Contact
- AC 110V 5A / 220V 3A

▶Contact from
- 2-contact of High, Low
  (High or Low, High & High, High & Low, Low & Low)

Connection Diagram



SS-4060 Series

Bimetal Thermometer

Applications

- Boiler, pipe and etc
- Petrochemical plant, ship and other plants
- Sanitation line (Food manufacturing line and etc.)

Specifications

▶Diameter
- 75, 100, 125, 150 mm

▶Accuracy

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0

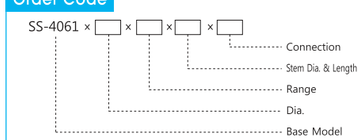
▶Model Type

Dia.	Model	Type
75	SS-4061	T - type
	SS-4063	L - type
100	SS-4062	T - type
	SS-4064	L - type
125	SS-4065	T - type
	SS-4067	L - type
150	SS-4066	T - type
	SS-4068	L - type

▶Scale Range
- -30℃ ~ 600℃

▶Material
- Case & Cover : STS 304
- Dial : Aluminum
- Stem : STS 304, STS 316
- Connection : STS 304
  - PT, PF, NPT ↔ 1/4, 3/8, 1/2, 1"

Order Code



SS-4070 Series

Angle Type Special Thermometer

Applications

- When the rotation of gauge is needed
- Petrochemical plant, food manufacturing line
- Boiler

Specifications

▶Diameter
- 100, 125, 150 mm

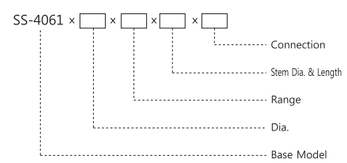
▶Accuracy

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0

▶Scale Range
- -30℃ ~ 500℃

▶Material
- Case & Cover : STS 304
- Dial : Aluminum
- Stem : STS 304, STS 316
- Connection : STS 304
  - PT, PF, NPT ↔ 1/2, 3/4, 1"

Order Code



SS-4080 Series

Glass Thermometer

Applications

- Boiler, Petrochemical plant
- Ship

Specifications

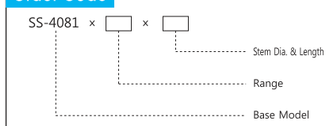
▶Accuracy & Mounting Type

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0
Mounting Type	SS-4081	I - type
	SS-4082	L - type

▶Scale Range
- 0℃ ~ 100℃ to 300℃

▶Material
- Case : Aluminum
- Windows : Glass
- Stem / Dia. : Brass / Ø9.5mm
- Connection : Brass / M22×1.5P

Order Code



Safety Certification Level Ex d IIC T4

KTD-21 Series

Explosion-Protected Thermometer Indicating Switch

Applications

- Indicating, warning or control of pipe temperature at the explosion risk existed area
- Indicating, warning or control of temperature at a LNG/LPG plants and chemical plants
- Indicating, warning or control of temperature in pressurized tank

Specifications

▶Accuracy

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0

▶Scale Range
- -30℃ ~ 600℃

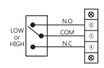
▶Material
- Case & Cover : Aluminum (powder coating)
- Dial : Aluminum
- Element : STS 304
- Stem : STS 304, STS 316
- Connection : STS 304
  - PF, PT, NPT ↔ 1/2

▶Rated Voltage and current of Contact
- AC 110 / 220V 5A

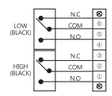
▶Contact from
- Micro contact Type
- SPDT*1, SPDT*2, DPDT*1
  (High, Low, High & High, High & Low, Low & Low)

Connection Diagram

▶1 S/W



▶2 S/W



Safety Certification Level Ex d IIC T4

KTD-22 Series

Explosion-Protected Thermometer Indicating Switch

Applications

- Indicating, warning or control of pipe temperature at the explosion risk existed area
- Indicating, warning or control of temperature at a LNG/LPG plants and chemical plants
- Indicating, warning or control of temperature in pressurized tank

Specifications

▶Accuracy

Item	Classfication	Mark
Accuracy	2.0 grade	CL 2.0

▶Scale Range
- -30℃ ~ 600℃

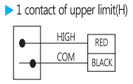
▶Material
- Case & Cover : Aluminum (powder coating)
- Dial : Aluminum
- Element : STS 304
- Stem : STS 304, STS 316
- Connection : STS 304
  - PF, PT, NPT ↔ 1/2

▶Rated Voltage and current of Contact
- AC 110 0.5A / AC 220V 0.25A

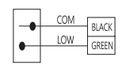
▶Contact from
- Micro contact Type
- SPDT*1, SPDT*2, DPDT*1
  (High, Low, High & High, High & Low, Low & Low)

Connection Diagram

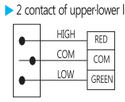
▶1 contact of upper limit(H)



▶1 contact of lower limit(L)



▶2 contact of upper·lower limit(H L)



K-OTI-34 Series

Oil Thermometer Indicator

Applications

- Control of temperature, Information system, Boiler
- Petrochemical plant, Transformer

Specifications

▶ Size (W×L×T)
- 190mm × 307mm × 94mm

▶ Accuracy

Item	Classfication	Mark
Indicating	3.0 grade	CL 3.0
Setting	4.0 grade	CL 4.0

▶ Scale Range
- 0℃ ~ 150℃(160℃), 30℃ ~ 180℃ to 250℃
- -20℃ ~ 130℃

▶ Material
- Case & Cover : Aluminum (Liquid coating)
- Dial : Alumunum
- Connection : Flange / PT, PF, NPT ↔ 1/2

▶ Capillary Tube
- Standard 2M (Max. 10M)

▶ Rated Voltage and current of Contact
- Switch Volume : 2P, 4P
- AC 110 / 220V 15A

▶ Contact from
- Micro Contact Type
- SPDP*1, SPDT*2, DPDT*1

▶ Option
- PT 100Ω

K-WTI-35 Series

Winding Thermometer Indicator

Applications

- Control of temperature, Information system, Boiler
- Petrochemical plant, Transformer

Specifications

▶ Size (W×L×T)
- 190mm × 307mm × 94mm

▶ Accuracy

Item	Classfication	Mark
Indicating	3.0 grade	CL 3.0
Setting	4.0 grade	CL 4.0

▶ Scale Range
- 0℃ ~ 150℃(160℃), 30℃ ~ 180℃ to 250℃
- -20℃ ~ 130℃

▶ Material
- Case & Cover : Aluminum (Liquid coating)
- Dial : Alumunum
- Connection : Flange / PT, PF, NPT ↔ 1/2

▶ Capillary Tube
- Standard 2M (Max. 10M)

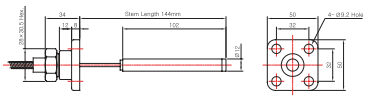
▶ Rated Voltage and current of Contact
- Switch Volume : 2P, 4P
- AC 110 / 220V 15A

▶ Contact from
- Micro Contact Type
- SPDP*1, SPDT*2, DPDT*1

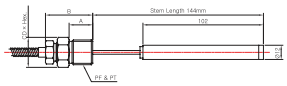
▶ Option
- PT 100Ω

BULB TYPE

▶ 11 Type

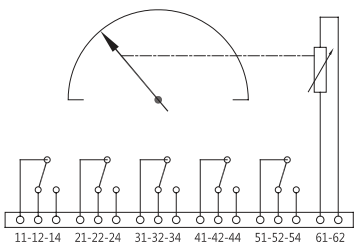


▶ 22 Type

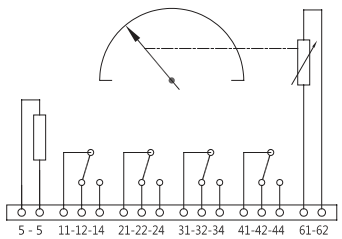


Connection Diagram

▶ K-OTI-34



▶ K-WTI-34



KINS
KONICS INSTRUMENT CO., LTD.

Thermocouple
R.T.D

KINS KONICS INSTRUMENT CO., LTD.

SS-5010 Series

Features

When the two dissimilar metal conductors are connected together to form a closed circuit and the two junctions are kept in different temperatures, the thermal electromotive force is generated in the circuit.

Thermocouple

Applications

1) Steel, nonferrous metals industry
   - Temperature measurement of smelting-furnace, High temperature furnace, Electric-heat furnace, constant heat furnace
   - Temperature measurement of heated metal
2) Electric power plant and Gas plant
   - Temperature measurement of pipe wall of furnace and boiler
   - Fluid temperature measurement of vapor, cooling-water, oil and etc.
3) Electronic industry
   - Temperature measurement of electric motor, Trans electric power system and Electric insulating oil
   - Transistor integrated circuit

SS-5020 Series

Features

As this has a sheath which is composited with fine metal or heat-resisting steel, it has good properties for the electric-insulation and heat-resistance

Sheath Thermocouple

Applications

4) Ceramic industry
   - Temperature measurement of furnace in the manufacturing process of glass, ceramic, cement and etc.
5) Chemical industry
   - Temperature measurement of reactors and extruder, molding machine, distiller and etc.
6) Shipbuilding industry
   - Temperature measurement of LPG/LNG tank inner wall and heat exchanger
7) Food industry
   - Temperature measurement in manufacturing processes of bread, liquor and others.

SS-5030 Series

Features

This is the typical resistance temperature detector using Mica or ceramic type RTD element.

Resistance Temperature Detectors

SS-5040 Series

Features

This is the typical resistance temperature detector using Mica or ceramic type RTD element. As this has a sheath which is composited with fine metal or heat-resistingsteel, it has good properties for the electric-insulation and heat-resistance.

Sheath Resistance Temperature Detectors

STATOR WINDING TEMPERATURE SENSOR

FEATURES SS-5051 type is installed in slots between stator windings, near hottest points to protect against overheating.
Very flexible and excellent
Non-inductive wound in long strips.

APPLICATION Large Motors and generators

SHEATH 측온저항체의 표준기호

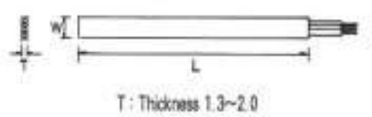
ELEMENT		RESISTANCE	COLOR	T.C.R. (ppm/℃)
CU10A	(Copper wire)	10Ω 0.02Ω at 25℃	yellow	4300
NT 120B	(Nickel wire)	120Ω 0.6Ω at 0℃	red	6700
PT 100A	(Platinum wire)	100Ω 0.12Ω at 0℃	blue	3850(DIN)
PT 100B(STD)	(Platinum wire)	100Ω 0.5Ω at 0℃	blue	3850(DIN)

* Dielectric strength : 3KV AC, 1min
* Maximum operating temperature : 130℃

Table 1. Standard

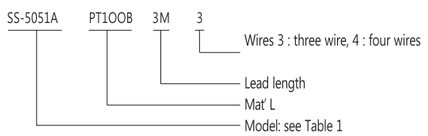
MODEL	(L)	(W)	(T)	AWG
SS-5051 A	155±2	6±0.5	1.4±0.2	AWG 24.26
SS-5051 B	155±2	9±0.5	2.0±0.2	AWG 22.24
SS-5051 C	50±2	9±0.5	2.0±0.2	AWG 22.24

DIMENSION



Body meterial : Epoxy glass
Lead wire : teflon AWG 22 to 26
Color code : Element meterial

MODEL NO CODE



※Leadwires
Standard wires are tenon or kapton insulation.
Other lead wire coverings are available on special order.

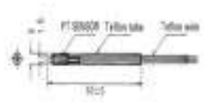
BEARING TEMPERATURE SENSOR

FEATURES SS-5052 type (RTD or Termocouple) proves for bearing protection temperautre.
Small in size, good vibration resistance.

APPLICATION Pump's and Generator's bearing point Rechargeable battery's temperature detector.

SHEATH MATERIAL Copper, Stainless steel, Nickel, Aluminum, Ceramic, Others

STANDARD TYPE



* Standard Type

MODEL		MATERIAL	KINDNESS
SS5052A	PT100	Platinum	100Ω. 500Ω.1000Ω
5052B	K		K. J. T. E

MODEL NO CODE

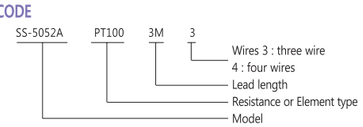
BEARING TEMPERATURE SENSOR

FEATURES Small type, Vibration proof very fast reponsibility
Reliable insulation (3kV/min)

APPLICATION Surface of pipe, battery, liquid tank

STANDARD TYPE

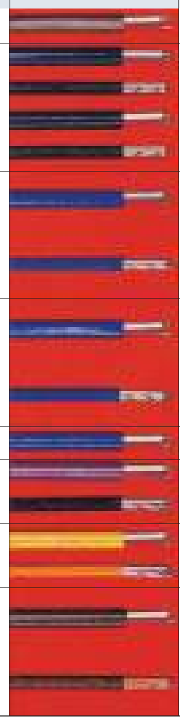
MODEL NO CODE



* Standard Type : SS-5053A PT 1008 3M3
* General specifications are equal to SS-5051 type

Characteristics Table for Thermocouple Wires, based on KS or JIS Standard

KS, JIS (KSC 1609 1981, JIS C 1610 - 1981 Reference)

Kinds and classes of thermocouple extension wires			Symbols and materials for thermocouples	Temp. Limits		Return electric Resistance /m 以	Color identification	Materials of extension	
Symbols	Old Symbols	Classification		Temp, Range (℃)	Limits of error (℃)			Positive (PX)	Negative (NX)
BX-G		Common class for General use	Platinum 30% rhodium / Platinum 6% rhodium	0~100		0.05		Copper	Copper
RX-G	WPR-G	Common class for General use	R Platinum 13% rhodium / Platinum	0~150	+3 -7	0.1		Copper	Copper Nickel Alloy (FNC-13)
RX-H	WPR-H	Common class for Heat Resistance							
SX-G		Common class for General use	S Platinum 10% rhodium / Platinum						
SX-H		Common class for Heat Resistance							
KX-G	WCA-G	Common class for General use	K Chromel / Alumel	-20 ~ 150	±2.5	1.5		Chromel (FC-TME)	Alumel (FA-TME)
KX-GS	WCA-GS	Common class for General use			±1.5				
KX-H	WCA-H	Common class for Heat Resistance			±2.5				
KX-HS	WCA-HS	Common class for General use			±1.5				
WX-G	WCA-G	Common class for General use			±3	0.5		Iron (Fe)	Constantan (CNF)
WX-GS	WCA-GS	Common class for General use			±1.5				
WX-H	WCA-H	Common class for Heat Resistance			±3				
KX-HS	WCA-HS	Common class for Heat Resistance			±1.5				
VX-G	WCA-G	Common class for General use		-2 0~ 100	±2.5	0.8		Copper	Constantan (FNC-12)
EX-G	WCRC-G		E Chromel / Constantan	-20 ~ 150	±2.5	1.5		Chromel (FC-TME)	Constantan (FNC-11)
EX-H	WCRC-H	Common class for Heat Resistance							
JX-G	WIC-G	Common class for General use	J Iron / Constantan	-20 ~ 150	±2.5	0.8		Chromel (Fe)	Constantan (FNC-11)
JX-H	WIC-H	Common class for Heat Resistance							
TX-G	WCC-G	Common class for General use	T Copper / Constantan	-20 ~ 150	±2.0	0.8		Copper	Constantan (FNC-11)
TX-GS	WCC-GS	Common class for General use			±1.0				
TX-H	WCC-H	Common class for Heat Resistance			±2.0				
TX-HS	WCC-HS	Common class for Heat Resistance			±1.0				

Characteristics Table for Thermocouple Wires, based on KS or JIS Standard

Color identification	Temp. Limits				Insulation		Shield		Outside cover		Electrical properties		Standard Lan-gth m	Approx weight Kg/Km
	Assembly		Number & diamebe of wise mm	Out Dia mm	Thick-ness mm	Over-all mm	Thick-ness shield mm	Drain wire mm	Thick-ness mm	Over-all mm	Diele-ctric ACV / min	Insul-ation M - km		
	BS Standard Type	0.5	7/0.32	0.96	0.4	1.76			0.5	2.8x4.6	1,000	PVC 50	300	23
		1.25	7/0.45	1.35	0.6	2.55			1.0	4.6x7.1	"	"	"	54
		2	7/0.60	1.80	"	3.0			"	5.0x8.0	"	"	"	76
		1.3	4/0.65	1.57	"	2.77			"	4.8x7.6	"	"	"	61
		2.3	7/0.65	1.95	"	3.15			"	5.2x8.3	"	"	"	84
	Bundle Type	0.75	24/0.2	1.20	0.5	2.20			0.8	3.8x6.0	"	"	"	37
		1.25	40/0.2	1.46	0.6	2.66			1.0	4.7x7.4	"	"	"	58
		2	63/0.2	1.88	"	3.08			"	5.1x8.2	"	"	"	73
	BS 14	2	1/1.63	1.63	0.6	2.83			0.8	4.5x7.3	"	"	"	68
	Gauge 16	1.3	1/1.29	1.29	0.5	2.29			"	3.9x6.2	"	"	"	42
	Gauge 20	0.5	1/0.81	0.81	0.4	1.16			0.5	2.7x4.3	"	"	"	20
	Standard Type	0.5	7/0.32	0.96	0.4	1.76	0.3		0.8	4.0x5.8	"	"	"	40
		1.25	7/0.45	1.35	0.6	2.55	"		1.0	5.2x7.7	"	"	"	70
		2	7/0.60	1.80	"	3.0	"		"	5.6x8.6	"	"	"	94
		1.3	4/0.65	1.57	"	2.77	"		"	5.4x8.2	"	"	"	78
		2.3	7/0.65	1.95	"	3.15	"		"	5.8x8.9	"	"	"	103
	Bundle Type	0.75	24/0.2	1.20	0.5	2.20	0.3		0.8	4.4x6.8	"	"	"	51
		1.25	40/0.2	1.46	0.6	2.66	"		1.0	5.3x7.7	"	"	"	75
		2	63/0.2	1.88	"	3.08	"		"	5.7x8.8	"	"	"	95
	BS 14	2	1/1.63	1.63	0.6	2.83	0.3		0.8	5.1x7.9	"	"	"	84
	Gauge 16	1.3	1/1.29	1.29	0.5	2.29	"		"	4.5x6.8	"	"	"	62
	Gauge 20	0.5	1/0.81	0.81	0.4	1.61	"		"	3.9x5.5	"	"	"	36
	Standard Type	0.5	7/0.32	0.96	0.6	2.16			1.0	6.5	"	"	"	50
		1.25	7/0.45	1.35	"	2.55			"	7.2	"	"	"	68
		2	7/0.60	1.80	"	3.0			"	8.1	"	"	"	93
		1.3	4/0.65	1.57	"	2.77			"	7.7	"	"	"	76
		2.3	7/0.65	1.95	"	3.15			1.1	8.6	"	"	"	106
	Bundle Type	0.75	24/0.2	1.20	0.5	2.20			1.0	6.5	"	"	"	53
		1.25	40/0.2	1.46	0.6	2.66			"	7.5	"	"	"	72
		2	63/0.2	1.88	"	3.08			"	8.2	"	"	"	94
	BS 14	2	1/1.63	1.63	0.6	2.83			1.0	7.8	"	"	"	89
	Gauge 16	1.3	1/1.29	1.29	0.5	2.29			"	6.7	"	"	"	63
	Gauge 20	0.5	1/0.81	0.81	0.4	1.61			"	5.4	"	"	"	36
	Standard Type	0.5	7/0.32	0.96	0.6	2.16	0.3		1.0	7.1	"	"	"	66
		1.25	7/0.45	1.35	"	2.55	"		"	7.8	"	"	"	8
		2	7/0.60	1.80	"	3.0	"		1.1	8.9	"	"	"	118
		1.3	4/0.65	1.57	"	2.77	"		1.0	8.3	"	"	"	96
		2.3	7/0.65	1.95	"	3.15	"		1.1	9.2	"	"	"	129
	Bundle Type	0.75	24/0.2	1.20	0.5	2.20	0.3		1.0	7.1	"	"	"	69
		1.25	40/0.2	1.46	0.6	2.66	"		"	8.1	"	"	"	91
		2	63/0.2	1.88	"	3.08	"		1.1	9.1	"	"	"	120
	BS 14	2	1/1.63	1.63	0.6	2.83	0.3		1.1	8.6	"	"	"	114
	Gauge 16	1.3	1/1.29	1.29	0.5	2.29	"		1.0	7.3	"	"	"	81
	Gauge 20	0.5	1/0.81	0.81	0.4	1.61	"		1.0	6.0	"	"	"	49
	Standard Type	0.5	7/0.32	0.96	0.6	2.16	0.05	0.93	1.0	7.5	"	"	"	61
		1.25	7/0.45	1.35	"	2.55	"	"	"	8.2	"	"	"	80
		2	7/0.60	1.8	"	3.0	"	"	1.1	9.3	"	"	"	109
		1.3	4/0.65	1.57	"	2.77	"	"	"	8.9	"	"	"	92
		2.3	7/0.65	1.95	"	3.15	"	"	"	9.6	"	"	"	119
	Bundle Type	0.75	24/0.2	1.20	0.5	2.20	0.05	0.93	1.0	7.5	"	"	"	64
		1.25	40/0.2	1.46	0.6	2.66	"	1.1	8.7		"	"	"	88
		2	63/0.2	1.88	"	1.61	"	"	"	9.5	"	"	"	111
	BS 14	2	1/1.63	1.63	0.6	2.83	0.05	0.93	1.1	9.0	"	"	"	105
	Gauge 16	1.3	1/1.29	1.29	0.5	2.29	"	"	1.0	7.7	"	"	"	75
	Gauge 20	0.5	1/0.81	0.81	0.4	1.61	"	"	"	6.4	"	"	"	47
	Standard Type		7/0.32	0.96	0.6	2.16	0.1		1.0	7.2	"	"	"	72
		1.25	7/0.45	1.35	"	2.55	"		"	8.0	"	"	"	93
		0.5	2	7/0.60	1.80	"	3.0		1.1	9.1	"	"	"	126
		1.3	4/0.65	1.57	"	2.77	"		"	8.7	"	"	"	107
		2.3	7/0.65	1.95	"	3.15	"		"	9.4	"	"	"	137
	BS 14	2	1/1.63	1.63	0.6	2.83	0.1		1.1	8.8	"	"	"	121
	Gauge 16	1.3	1/1.29	1.29	0.5	2.29	"		1.0	7.5	"	"	"	87
	Standard Type	0.5	7/0.32	0.96	0.6	2.16	0.1+0.1		1.0	8.0	"	"	"	98
		1.25	7/0.45	1.35	"	2.55	"		1.1	8.9	"	"	"	122
		2	7/0.60	1.80	"	3.0	"		"	9.8	"	"	"	154
		1.3	4/0.65	1.57	"	2.77	"		"	9.4	"	"	"	133
		2.3	7/0.65	1.95	"	3.15	"		"	10.1	"	"	"	166
	BS Gauge14	2	1/1.63 1.63	0.6	2.83	01+0.1			1.1	9.5	"	"	"	148
	16	1.3	1/1.29	1.29	0.5	2.29	"		"	8.4	"	"	"	113

PVC-POLYETHLENE INSULATED

Number of pairs	Nominal sectional area mm^2	Conductor		Temp. Limits		Temp. Limits		Temp. Limits		Standard Langth m	Approx weight Kg
		Number & diameter of wise mm	Outer diameter mm	Thickness mm	Overall diameter mm	Separate tape mm	Overall diameter mm	Thickness mm	Overall diameter mm		
2	0.5	7/0.32	0.96	0.6	2.16	0.2	7.8	1.1	10.0	1000	107
3	"	"	"	"	"	"	8.8	1.1	10.6	"	135
4	"	"	"	"	"	"	9.4	1.1	11.5	"	163
5	"	"	"	"	"	"	11.3	1.2	13.4	"	191
8	"	"	"	"	"	"	11.0	1.2	13.8	"	235
7	"	"	"	"	"	"	11.4	1.2	13.8	"	251
10	"	"	"	"	"	"	15.4	1.4	17.9	"	375
12	"	"	"	"	"	"	15.1	1.4	18.5	"	421
15	"	"	"	"	"	"	17.7	1.5	20.7	"	521
18	"	"	"	"	"	"	19.7	1.5	22.4	"	620
20	"	"	"	"	"	"	20.4	1.6	23.7	"	681
24	"	"	"	"	"	"	22.5	1.7	25.8	.	803
26	"	"	"	"	"	"	23.2	1.7	26.5	"	862
30	"	"	"	"	"	"	24.1	1.8	28.4	"	990
2	1.25	7/0.45	1.35	0.6	2.55	0.2	9.8	1.1	11.3	1000	150
3	"	"	"	"	"	"	9.1	1.2	12.3	"	188
4	"	"	"	"	"	"	10.9	1.2	13.3	"	236
5	"	"	"	"	"	"	12.9	1.3	15.5	"	298
8	"	"	"	"	"	"	13.9	1.3	16.0	"	341
7	"	"	"	"	"	"	13.4	1.3	16.0	"	366
10	"	"	"	"	"	"	17.4	1.5	20.7	"	550
12	"	"	"	"	"	"	18.7	1.5	21.5	"	619
15	"	"	"	"	"	"	20.5	1.6	24.0	"	769
18	"	"	"	"	"	"	22.8	1.7	26.2	"	917
20	"	"	"	"	"	"	24.8	1.7	27.5	"	1022
24	"	"	"	"	"	"	26.1	1.8	29.8	"	1206
26	"	"	"	"	"	"	27.2	1.9	31.0	"	"297
30	"	"	"	"	"	"	29.2	1.9	33.0	"	1489
2	1.3	4/0.65	1.57	0.6	2.77	0.2	9.2	1.2	12.2	1000	168
3	"	"	"	"	"	"	10.8	1.2	13.0	"	213
4	"	"	"	"	"	"	11.6	1.2	14.2	"	268
5	"	"	"	"	"	"	14.8	1.3	16.6	"	347
6	"	"	"	"	"	"	14.0	1.4	17.3	"	387
7	"	"	"	"	"	"	14.5	1.4	17.3	"	417
10	"	"	"	"	"	"	19.5	1.5	22.2	500	536
12	"	"	"	"	"	"	20.2	1.6	23.3	"	734
15	"	"	"	"	"	"	22.1	1.7	26.0	"	894
18	"	"	"	"	"	"	24.6	1.8	28.6	"	1066
20	"	"	"	"	"	"	26.8	1.8	29.8	"	1187
24	"	"	"	"	"	"	28.2	1.9	32.2	"	1400
26	"	"	"	"	"	"	29.4	2.0	33.5	"	1498
30	"	"	"	"	"	"	31.5	2.0	35.7		1726
2	2.0	7/0.6	1.8	0.6	3.0	0.2	10.7	1.2	13.0	1000	205
3	"	"	"	"	"	"	11.6	1.2	13.9	"	269
4	"	"	"	"	"	"	12.6	1.3	15.3	",	332
5	"	"	"	"	"	"	15.7	1.4	17.9	"	430
8	"	"	"	"	"	"	15.1	1.4	18.5		485
7	"	"	"	"	"	"	15.7	1.4	18.5	"	555
10	"	"	"	"	"	"	20.7	1.6	24.0	500	801
12	"	"	"	"	"	"	21.8	1.6	24.9	"	922
15	"	"	"	"	"	"	24.7	1.7	27.8	.	1144
18	"	"	"	"	"	"	26.4	1.8	30.4	"	1365
20	"	"	"	"	"	"	28.8	1.9	32.1	"	1504
24	"	"	"	"	"	"	30.3	2	34.7	"	1779
26	"	"	"	"	"	"	31.7	2	35.9	"	1928
30	"	"	"	"	"	"	34.9	2.1	38.5	"	2217
2	2.3	7/0.65	1.95	0.6	3.15	0.2	11.3	1.2	13.3	1000	232
3	"	"	"	"	"	"	12.1	1.3	14.7	"	298
4	"	"	"	"	"	"	13.1	1.3	15.9	.	368
5	"	"	"	"	"	"	15.3	1.4	18.6	"	476
8	"	"	"	"	"	"	16.8	1.4	19.3	.	549
7	"	"	"	"	"	"	16.5	1.4	19.3	"	597
10	"	"	"	"	"	"	21.5	1.6	25	500	903
12	"	"	"	"	"	"	22.8	1.7	26.2	"	"029
15	"	"	"	"	"	"	25.8	1.8	29.2	"	1276
18	"	"	"	"	"	"	28.6	1.9	31.9	"	1523
20	"	"	"	"	"	"	29.1	2	33.7	"	1695
24	"	"	"	"	"	"	32.7	2.1	36.4	"	2005
26	"	"	"	"	"	"	33.2	2.1	37.7	a	2169
30	"	"	"	"	"	"	36.4	2.2	40.8	"	2497

Duplex

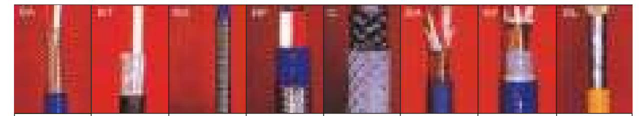
Standard	Type (BX / POG / NEG)			RX±5X	KX		WX		VX	EX	JX	TX
				Copper (Cu)	Copper	FC-TME (Fe)	Iron (Fe)	Iron (Cu)	Copper	FC-TME (Fe)	Iron (Cu)	Copper
				FA-TME	FA-TME	CNF	FNC-16	FNC-12	FNC-II	FNC-II	FNC-II	
	standard type	7/0.65	2.3mm²	0.0148	0.0311	0.4219	0.2627	0.1722	0.2312	0.5166	0.2669	0.2312
		7/0.6	2.0	0.0174	0.0323	0.4951	0.3082	0.2021	0.2714	0.6063	0.3124	0.2714
		4/0.65	1.3	0.0258	0.0544	0.7383	0.4596	0.3014	0.4047	0.9041	0.4671	0.4047
		(7/0.5)	1.3	0.0250	0.0525	0.7133	0.4440	0.2912	0.3910	0.8734	0.4513	0.3910
		(7/0.45)	1.11	0.0309	0.0648	0.8803	0.5479	0.3593	0.4072	1.9779	0.5569	0.4072
		(7/0.40)	0.9	0.0392	00821	1.1142	0.6935	0.4548	0.6107	1.3643	0.7049	0.6107
		7/0.32	0.5	0.0612	0.1283	1.7408	1.0836	0.7106	0.9542	2.1316	1.1013	0.9542
	Bundly type	63/0.2	2.9mm²	0.0174	0.0365	0.4750	0.3082	0.2021	0.2714	0.5861	0.3133	0.2714
		40/0.2	1.25	0.0274	0.0574	0.7799	0.4855	0.3184	0.4275	0.9550	0.4934	0.4275
		24/0.2	0.75	0.0457	0.0958	1.3000	0.8092	0.5306	0.7126	1.5918	0.8224	0.7126
		(30/0.18)	0.75	0.0451	0.0946	1.2838	0.7991	0.52440	0.7037	1.5719	0.8122	0.7037
		(20/0.18)	0.5	0.0677	0.1419	1.9256	1.1986	0.7860	1.0556	2.3579	1.2183	1.0556
	Solid type	1.6	2.0mm²	0.0171	0.0359	0.4875	0.4034	0.1990	0.2672	0.5959	0.3084	0.2672
		1.3	1.3	0.0259	0.0544	0.7384	0.4596	0.3014	0.4047	0.9041	0.4671	0.4047
		(1.2)	1.1	0.304	0.0638	0.8666	0.5394	0.3537	0.4750	0.0611	0.5482	0.4750
		1.0	0.78	0.0439	0.0919	1.2478	0.7767	0.5093	0.6840	1.5279	0.7894	0.6840
		(0.8)	0.5	0.0685	0.1437	1.9227	1.2136	0.7958	1.0688	2.3874	1.2335	1.0688
		0.65	0.33	0.1039	0.2177	2.9534	1.8383	1.2055	1.6190	3.6163	1.8685	1.6190
		(0.5)	0.2	0.1756	0.2535	4.9911	3.1067	2.0372	2.7361	6.1116	3.1577	2.7361
		0.32	0.08	0.4287	0.8982	12.1853	7.5848	4.9736	6.6800	14.9208	7.7091	6.6800
		0.2	0.03	1 0975	2.2995	31.1944	19.4169	12.7324	17.10098	38.1972	19.7353	17.1009
	Solid type	1.63	BS14	0.0165	0.0346	0.4696	0.2924	0.1917	0.2574	0.5750	0.2972	0.2574
		1.29	BS16	0.0263	0.0552	0.7498	0.4668	0.3061	0.4110	0.4111	0.4744	0.4110
		0.81	BS20	0.0669	0.1401	1.9011	1.1838	0.7463	1.0425	2.3287	1.2032	1.0425
	Twist type	7/0.61	BS14	0.0168	0.0353	0.4790	0.2982	0.1956	0.2626	0.5865	0.3031	0.2626
		7/05	BS16	0.0258	0.0525	0.7130	0.4439	0.2911	0.3908	0.8730	0.4511	0.3908
		7/0.32	BS20	0.0612	0.1283	0.7408	1.0836	0.7106	0.9542	2.1316	1.1013	0.9542

Allowance of Temperature Difference

UNIT : μV

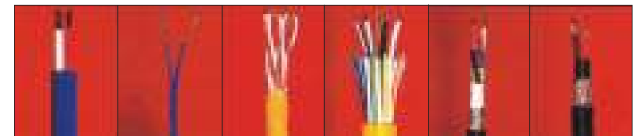
Standards	Name	Limits of Error	− 20℃	50℃ Oil bath	58, 38℃ Sodium acetate	100℃ Water boiling point	150℃ Oil bath	218℃ Naphtalin boiling point
JIS	BX − G							
	RX − G/H	+3 −7		296 +20 −45	352 +20 −46	647 +23 −52	1041 +24 −58	
	SX − G/H	+3 −7		299 +19 −45	354 +20 −46	645 +22 −51	1029 +24 −56	
	KX − G/H	±2.5	−777 +95.5 −96	−22 +103.5 −102.5	2369 ±103 5	4095 ±103. 5	6137 +101 −100.5	
	KX − GS/HS	±1.5	−777 +57 −58	2022	2369 +62.38 −61.62	4095 +62.5 −62	6137 +60.5 −60	
	WX − G/H	±3.0	− 777 ±115	2022 +124 −123	2369 +124.38 −124.0	4095±124	6137 ±121	
	VX − G	±2.5	− 777 +95.5 −96	2022 +103.5 −102.5	2369 ±103 5	4095±103.5		
	E X − G/H	±2.5	− 1151 ±141	3047 +158 −157.5	3579 +150.58 −159.0	6317 +169 −168.5	9787 +177.5 −178.5	
	JX − G/H	±2.5	− 995 +123.5 −122	2585 +132 −132.5	3029 +131.80 −133.5	5268 +135.5 −136	8008 +138 −137.5	
	TX − G/H	±2.0	−756 +74 −73	2035 +86 −85	2397 +87.9 −86.38	4277 +94 −93	6702 +101 −100	
	TX − GS/HS	±1.0	− 757 ±37	2035 ±43	2397 +43.66 −43.38	4277 +47 −46	67 +51 −50	
ANSI	BX	+0 −3.7		2 +0 −1	5 +0 −1.38	33 +0 −2.7		
	RX		±5	296 +34 −32	352 +34 −33	647 +38 −37	1041 ± 41	1629 ±42
	SX		±5	299 +34 −33	354 +33.62 −33.0	645 +37 −36	1029 ±40	1594 ±43
	KX	±2.2		2022 +91 −90	2369 +91.2 −91.02	4095 ±91	6137 ±89	8857 +89 −88
	EX	±1.7		3047 ±107	3579 +108.88 −108.48	6317 ±115	9787 +121 −122	14759 ±127
	JX		±2.2	2585 +116. −117.	3029 +116.6 −117.42	5268 ±120	8008 +122 −121	11776 ±122
	J X		±1.1	2035 ±37	3029 ±58 3	5268 ±60	8008 ±61	11776 ±61
	TX	±1.0	− 757 ±37	2035 ±43	2397 +43.62 −43.38	4277 +47 −48		
	TX−	±0.5	− 757 ±37	2035 ±21	2397 +22 −21.88	4277 +23 −24		

A KIND OF STANDARD SHIELD



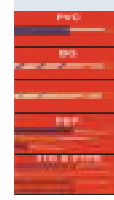
Soft-Copper Wire Braided (0.05ø ~ 0.26ø Standard : 0.12 ø)	Soft-Copper Tinplated Braided (0.05ø ~ 0.26ø)	SUS-304 Stainless Steel Braided 0.02 (0.12ø)	Soft-Steel Wire Braided (thin wire braided by 0.2ø less)	Soft-Steel Wire Outside Braided (braided by 0.32ø or more)	Bare Soft-Copper Taped (0.1t)	Soft-Copper+Soft-Steel Taped (0.08 - 0.1t) Taped (0.08 - 0.1t)	Alumi-Myler Taped wild Drain wire (0.025 - 0.05t)

A KIND OF FORM



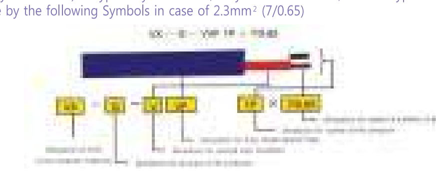
F : TYPE	FF : TYPE	R1: TYPE	R2: TYPE	R4: TYPE	R5: TYPE

OVAL TYPE INSULATED THERMOCOUPLE WIRE

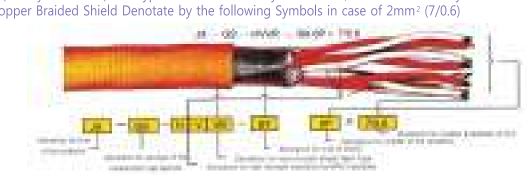
Coloridentification	Condition	Conductor			Insulation		Shield		Electrical properties		Temperature range ℃	Standard Langth m
	Nominal	Nominal sectional ar mm^2	Number & diameter of wire mm	Outer diameter mm	Thick-ness mm	Overall diameter mm	Thick-ness mm	Overall diameter mm x mm	Dielectric strength AC / min	Insulation resistance MΩ - km		
	△○△×	0.08	1/0.32	0.32	0.3	0.8	0.5	1.8x2.6	1.000	100	-20~+100	200
		0.33	1/0.65	0.65	0.4	1.45	"	2.5x3.9	"	"	"	"
		0.50	1/0.80	0.80	0.4	1.6	0.6	2.8x4.4	"	"	"	"
		0.75	1/1.0	1.0	0.4	1.8	"	3.0x4.8	"	"	"	"
	××△△	0.08	1/0.32	0.32	0.2	0.8	0.2	1.2x2.0	200	0.1	~+200	200
		0.33	1/0.65	0.65	0.32	1.3	0.25	1.8x3.1	"	"	"	"
		0.00	1/0.80	0.80	0.32	1.5	"	2.0x3.5	"	"	"	"
		0.75	1/1.0	1.0	0.32	1.7	0.3	2.3x4.0	"	"	"	"
	××△△	0.3	1/0.65	0.65	0.45	1.6	0.4	2.4x4.0	500	0.1	~+200	200
		0.50	1/0.80	0.80	"	1.7	"	2.5x4.2	"	"	"	"
		0.75	1/1.0	1.0	"	1.9	"	2.7x4.6	"	"	"	"
		1.30	1/1.3	1.3	"	2.2	"	3.0x5.2	"	"	"	"
	×◎◎◎	0.03	10.2	0.20	0.15	0.50	0.2	0.9x1.4	1.000	1.000	-60~+200	100
		0.08	1/0.32	0.32	"	0.62	"	1.0x1.7	"	"	"	"
		0.33	1/0.65	0.65	0.25	1.15	0.3	1.8x2.9	"	"	"	"
		0.50	1/0.80	0.80	"	1.30	"	1.9x3.2	"	"	"	"
		0.75	1/1.0	1.0	0.30	1.60	"	2.2x3.8	"	"	"	"
	×◎◎◎	0.03	1/0.2	0.2	0.15	0.5	0.2	0.9x1.4	1.000	1.000	-60~+250	100
		0.08	1/0.32	0.32	"	0.62	"	1.0x1.7	"	"	"	"
		0.33	1/0.65	0.65	0.20	1.05	0.3	1.7x2.7	"	"	"	"
		0.50	1/0.80	0.80	0.25	1.3	"	1.9x3.2	"	"	"	"
		0.75	1/1.0	1.0	"	1.5	"	2.1x3.6	"	"	"	"
	×◎◎◎	0.08	1/0.32	0.32	0.15	0.62	0.2	1.0x1.7	1.000	1.000	-60~+400	100
		0.33	1/0.65	0.65	0.20	1.05	"	1.5x2.5	"	"	"	"
		0.50	1/0.80	0.80	"	1.20	0.3	1.8x3.0	"	"	"	"
		0.75	1/1.0	1.0	0.25	1.50	"	2.1x3.6	"	"	"	"
		1.30	1/1.3	1.3	"	1.80	0.35	2.5x4.3	"	"	"	"
		2.00	1/1.6	1.6	"	2.10	"	2.8x4.9	"	"	"	"
	○○×△	0.33	1/0.65	0.65	0.4	1.45	0.6	2.7x4.1	1.000	500	-20~+200	200
		0.50	1/0.80	"	"	1.60	"	2.8x4.4	"	"	"	"
		0.75	1/1.0	"	"	1.80	"	3.0x4.8	"	"	"	"

Explanation Symbol

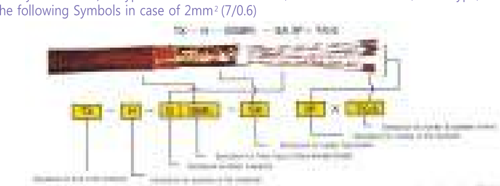
- VX(Old Symbols:WCA)-G Type Vinyl Insulation, Vinyl Covered Sheath, Parallel Type Denotate by the following Symbols in case of 2.3mm² (7/0.65)



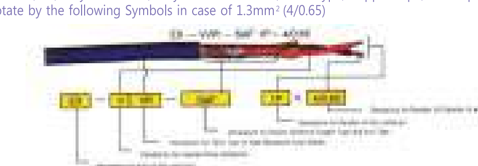
- JX(Old Symbols:WIC)-G S Type Heat Resistant Vinyl Insulations, Heat Resistant Vinyl Covered Sheath, Copper Braided Shield Denotate by the following Symbols in case of 2mm² (7/0.6)



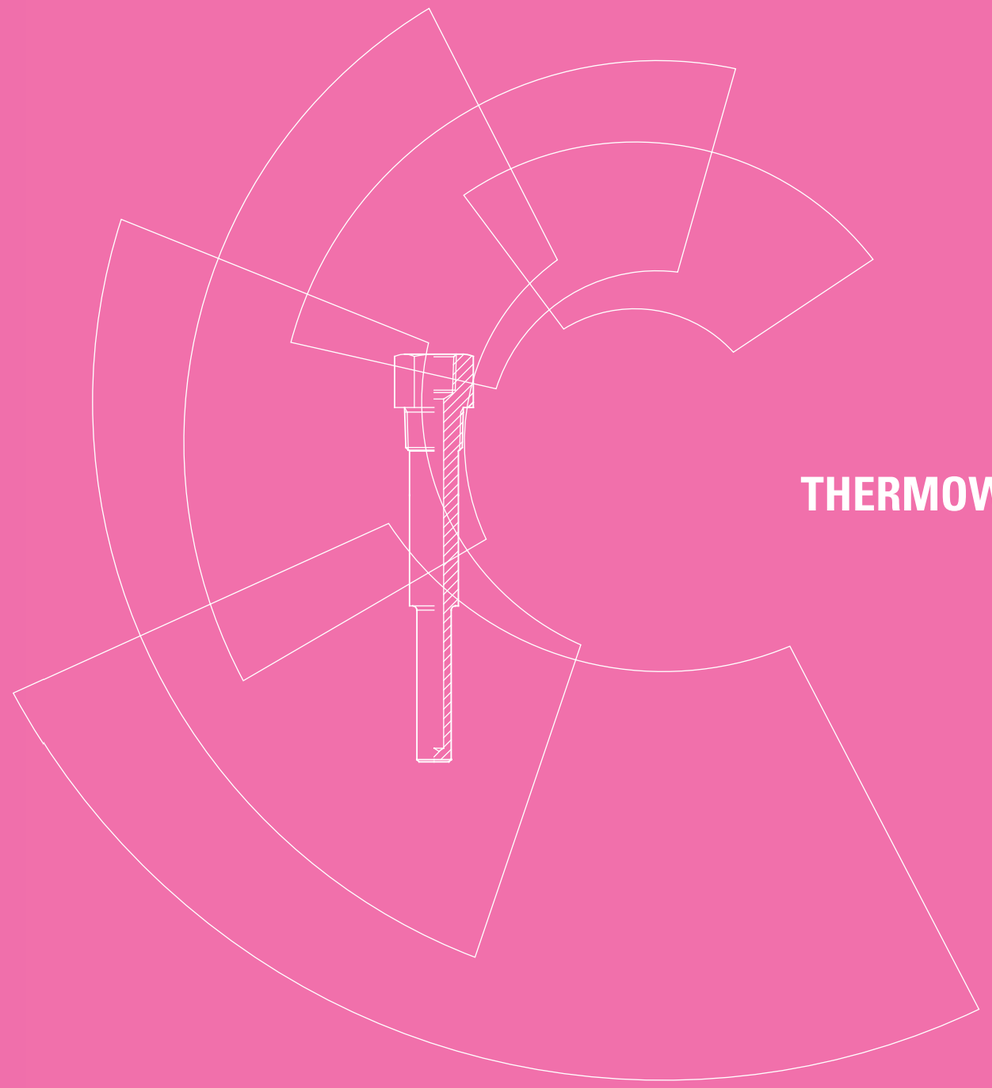
- TX(Old Symbols:WCC)-H Type Glass Braided Insulation, Glass Braided Sheath, Twist Type, Shield Denotate by the following Symbols in case of 2mm² (7/0.6)



- ANSI Code, EX, Vinyl Insulation, Vinyl Covered Sheath, Twist Type, Copper Tape, Iron Tape Double Shield, Denotate by the following Symbols in case of 1.3mm² (4/0.65)



KINS
KONICS INSTRUMENT CO., LTD.



THERMOWELL

PVC-POLYETHLENE INSULATED

Number of pairs	Concent.	Temp.(℃)	304SS	321SS	316SS	316LSS	316LJ1LSS	310S SS	347SS	Carpnnter 20	Inconel 600	Nimonic	Hastelloy B	Hastelloy C	Hastelloy X	Titanium	Monel	Tantalum	Teflon	Copper	Zirconium	Nickel	PVC	Cupro-nickel	Aluminium	Brass	Lead	Common steel	50Co-30Cr	Haynes alloy 25
H_2SO_4	5%	30	B	B	B	B	B	B	B	A	B	B	A	A		B	B	A	A	B	A	B	A	B	C	C	A	C		A
	5%	B,P	C	C	C	C	C	C	C	B	C	C	A	B		C	C	A		C	A	C		C	C	C	A	C		B
	10%	30	B	B	B	B	B	B	B	A	B	B	A	A		B	B	A	A	B		B	A	B	C	C	A	C		A
	10%	BP	C	C	C	C	C	C	C	A	C	C	A	B		C	C	A		C		B		C	C	C	A	C		B
	50%	30	C	C	C	C	C	C	C	AB		B	A	A		B	B	A	A	B		B	A	B	C	C	A	C		A
	50%	BP	C	C	C	C	C	C	C	A	C	C	A	B		C	C	A		C		B		C	C	C	B	C		B
	90%	30	B	B	B	B	B	B	B	A	B	°±	A	A		B	B	A	A	B	B	B	A	B	C	C	A	C		A
	90%	BP	C	C	C	C	C	C	C	A	C	C	A			C	C	A		C	B	B		C	C	C	B	C		B
2HCL	5%	30	C	C	C	C	C	C	C	B	B	B	A	A		A	B	A	A	B	B		A	C	C	C	B	C		B
	5%	B,P	C	C	C	C	C	C	C	B	B	B	A	A		B	B	A						C	C	C	B	C		C
	10%	30	C	C	C	C	C	C	C	B	B	B	A	A		A	B	A	A	B	B		A	C	C	C	B	C		B
	10%	B,P	C	C	C	C	C	C	C	C	B	B	A	A		B	B	A						C	C	C	B	C		C
	20%	30	C	C	C	C	C	C	C	B	B	B	A	A		A	B	A	A	B	B		A	C	C	C	B	C		B
	20%	B,P	C	C	C	C	C	C	C	C	B	B	A	A		B	B	A						C	C	C	B	C		C
HNO_3	20%	30	A	A	A	A	A	A	A	A	A	A	C	A		A	C	A	B	C		C	B	C	C	B	C	C		B
	20%	B,P	A	A	A	A	A	A	A	A	A	A	C	A		A	C	A		C		C		C	C	C	C	C		C
	40%	30	A	A	A	A	A	A	A	A	A	A	C	A		A	C	A	A	C		C	B	C	C	B	C	C		B
	40%	B,P	A	A	A	A	A	A	A	A	A	A	C	A		A	C	A		C		C		C	C	C	C	C		C
	75%	30	A	A	A	A	A	A	A	A	A	A	C	A		A	C	A	A	C		C	B	C	C	B	C	C		B
	75%	B,P	A	A	A	A	A	A	A	A	A	A	C	A		A	C	A		C		C		C	C	C	C	C		C
CH_3CO_2H	10%	30	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	B	A	B	A	B	B	B	B	C		A
	10%	B,P	A	A	A	A	A	A	A	A	A	A	A	A		A	B	A	A	B	A	B		B	B	B	B	C		A
	50%	30	A	A	A	A	A	A	A	A	A	A	A	A		A	B	A	A	B	A	B	A	B	A	B	B	C		A
	50%	B,P	B	A	A	A	A	A	A	B	A	A	A	A		A	B	A	A	B	A	B		B	B	C	B	C		A
	80%	30	B	A	A	A	A	A	A	B	A	A	A	A		A	B	A	A	B	A	B	A	B	A	C	B	C		A
	80%	B,P	B	A	A	A	A	A	A	B	A	A	A	A		A	B	A	A	B	A	B		B	B	C	B	C		A
H_3PO_4	5%	30	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	B	A	B	A	B	C	C	B	A		A
	5%	B,P	B	B	A	A	A	A	A	B	A	A	A	A		A	A	A	A	B	A	B		B	C	C	B	A		A
	50%	30	B °Æ	B	B	B	B	B	B	A	A	A	A	A		A	A	A	A	B	A	B	A	B	C	C	B	A		A
	50%	B,P	B	B	B	B	B	B	B	A	B	B	A	A		A	B	A	A	B	A	B		C	C	C	B	A		B
	85%	30	B	B	B	B	B	B	B	A	B	B	A	A		A	A	A	A	B	A	B	A	B	C	C	B	A		B
	85%	B,P	B	B	B	B	B	B	B	A	B	B	A	A		A	B	A	A	B	A	B		C	C	C	B	A		B
H_2F_2	30%	30	C	C	C	C	C	C	C	C	A		A	A		C	A			A		A	A	C	C	B	B	C		C
	30%	B,P	C	C	C	C	C	C	C	C	B		C	C		C	B			C		C		C	C	C	B	C		C
	70%	B,P	C	C	C	C	C	C	C	C	B		C	C		C	B			C		C		C	C	C	C	C		C
HCl		30	B	B	B	B	B	B	B	B	B	B	A	A					A		A								A		A
		200	B	B	B	B	B	B	B	B	B	B	A	A					A		A								A		A
		100	B	B	B	B	B	B	B	B	B	B	A	A							A					A					B
NaOH	10%	30	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	B	A	A	A	A	B	B	B	B			
	10%	B,P	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A		B	A	A		A	B	B	B	B			
	50%	30	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	B	A	A	A	A	B	B	B	B			
	50%	B,P	B	B	B	B	B	B	B	A	A	A	A	A		A	A	A		B	A	A		B	B	B	B	B			
	70%	30	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	B	A	A	A	B	B	B	B	B			
	70%	B,P	B	B	B	B	B	B	B	B	A	A	A	A		A	A	A		B	A	A		B	B	B	B	B			
KOH	25%	B,P	A	A	A	A	A	A	A	A	A	A	A	A		C	A	C		C	A	B		B	C	C	B	B			
	50%	B,P	B	B	B	B	B	B	B	A	A	A	A	A		C	A	C		C	A	B		B	C	C	B	B			
HCl (dry)		30	C	C	C	C	C	C	C	A			A	A		A	A		A	A				A	A	C	B	C		A
HCl (wet)		30	C	C	C	C	C	C	C	C			C	C		A	A		A	C				C	C	C	B	C		A
HCl (vapor)			C	C	C	C	C	C	C	B								A			C				C	B	C			
HF			C	C	C	C	C	C	C	A	C					B	C	A			B	A	C	C	C	B	C	-		
H_2 (SiF_6)	5%	20	C	C	C	C	C	C	C	A	A		A	A		B	C	A			C	A	C	C	C	B	C			
F	10%	30	C	C	C	C	C	C	C	A	A		A	A		B	C	A			C	A	C	C	C	B	C			
NaOH	10%	B,P	B	A	A	A	A	A	A	A								A					A	C	C	B	C			
	75%	100	B	A	A	A	A	A	A	A									A					A	C	C	B	C			
CO_2	10%	200	A	A	A	A	A	A	A	A			A	A		A	A	A												
SO_2			A	A	A	A	A	A	A	A						A	A	A	A			A		A		C		C		
$Na_4P_2O^{10}$	10%	30	B	B	B	B	B	B	B	B	C	C	C	A		C	C			C	B	C	C					C		
CHCl		30	C	C	C	C	C	C	C										C				B	C	C		C			
AlF_3	50%	30	B		B											B			A		B		A	C						
Fatty Acids		100	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A				A		A						
NH_3			A	A	A	A	A	A	A	A								A												
NaCl			A	A	A	A	A	A	A	A	A	A							B		A		A	C	B		B			
CrO_4									A					-			A													
H_2O_2			A	A	A	A	A	A	A	A	A	A		A	A	A	A	A													
S (Liquid)			A	A	A	A	A	A	A	A	A					A	A		A		A			A						
$CaCl_2$			A	A	A	A	A	A	A	A	A		A	A		A	A		A	B		A	A	A		B		B		

Out of the Hastelloy series and excellent in heat resistance.

Cobalt-base alloy and excellent in heat and abrasion resistance.

Note: A = Almost no corrosion in critical conditions. B = Small corrosion but permissible in general use other than specific parts. C = Heavy corrosion and unsuitable.

Features of Protection Tubes / Metallic Protection Tubes

Material	Operating Temp. (℃)	Maximum Temp. (℃)	Features
Plain Steel	800	900	Good resistance to reducing atmosphere but less resistant to oxidation and acids attacks.
304 S.S.	900	1,000	Widely used as common protection tube against heat and corrosion but not recommendable for use in the presence of sulphur or reducing flame.
304L.S.S.	900	1,000	Less carbon content (Cn0.03%) than 304S.S. and excellent resistance to grain boundary corrosion.
321 S.S.	900	1,000	Higher corrosion resistance than 304 S.S. because of its Ti content. Excellent resistance to grain boundary corrosion after welding.
316 S.S.	900	1,000	Contains Mo and excellent resistance to heat, acids and alkalis.
316L S.S.	900	1,000	Less carbon content than 316S.S. and has better resistance to grain boundary corrosion.
310S S.S.	950	1,050	High Ni-Cr content and good high temperature strength with resistance to oxidation at high temperatures.
347 S.S.	900	1,000	Because of its Nb-Ta content, higher corrosion resistance than 304 S.S. and excellent resistance to grain boundary corrosion.
446 S.S.	1,050	1,125	Excellent resistance to oxidizing and reducing flames containing sulphur. Best suitable for the use in salt baths, molten metals and other high temperature applications.
50Co-30Cr	1,100	1,20	Excellent resistance to heat, corrosion and abrasion. Also good resistance to sulphurizing atmospheres.
Inconel600	1,180	1,250	Excellent resistance to oxidizing and reducing atmospheres at high But sulphurous atmospheres should beavoided.
Incoloy 800	870	1,000	Excellent to high temperature oxidizing atmospheres and thermal shock. About 10 times longer service life than 304 S.S. against high temperature corrosion.
Kanthal A	Oxi. 1,000 Red. 1,000	-	Good resistance to high temperature oxidation but becomes brittle due to recrystallization.
80Ni.20Cr	1,100	1,250	Good mechanical strength and corrosion resistance at high temperature oxidizing atmospheres but not recommendable for use in sulphurizing atmospheres.
Kurimax*	1,200	1,400	Excellent resistance to molten chemicals and conbustion gases. Also good resistance to corrosion by liquid copper.
Hastelloy B	800	1,100	Excellent resistance to heat and corrosion, especially to HCl and H2 S04
Hastelloy C	1,000	1,100	Excellent resistance to high temperature oxidizing and reducing atmospheres and also to Cl2 gases.
Hastelloy X	1,175	1,260	Excellent resistance to oxidizing and carburizing atmospheres at high temperatures. Better machinability and weldability than other Hastelloy alloys.
Haynes Alloy	25 980	1,100	High resistance to oxidizing and carburizing atmospheres at high temperatures.
Titanium	Oxi. 250 Red. 1,000	-	Superior corrosion resistance in cryogenic temperatures but at high temperatures. easily oxidized and becomes brittle.
Monel	500	600	Excellent resistance to water vapor, high pressure and corrosion.
Tantalum	Oxi. 300 Red. 2,200		Excellent heat-resistant material with high resistance to all acids but apt to severe oxidation and embrittlement in air at high temperatures.

Note: Operating and maximum temperatures vary depending on the atmospheres.
Other special protection tubes are also available upon repuest.

Model No.

SS-5090 Series

Features of Protection Tubes J Non-Metallic Protection Tubes

Material	Code-No.	Operating Temp. (℃)	Maximum Temp. (℃)	Features
Translucent Quartz Transparent Quartz	QT	1,000	1,100	Excellent resistance to thermal shock but fragile. Poor resistance to alkalis but good to acids. Less gas-tightness in hydrogen and reducing gases. High thermal conductivity.
Mullite	PT2	1,400	1,500	High alumina ceramic. Good resistance to thermal shock. Recommendable for use in coal or oil burning and electric furnaces. Sintered alumina. Better than PT2 slightly less thermal shock resistance.
	PTI	1,500	1,600	Recommendable for use in heating furnace and regenerator, impervious.
Recrystallized Alumina	PTO	1,600	1,800	Superior chemical stability and better than PT-I, Recommendable for use in molten steel, slag and molten glass, impervious.
Cermet (Cermotherm)	2040	1,600	2,200	High heat conductivity; good thermal shock resistance and corrosion resistance in molten metals. Recommendable for continuous use in molten steel but not suitable for use in oxidizing atmosphere at high temperatures.
Recrystallized Silicon Carbide	Y3 SiC	1,650	-	Good resistance to acids and alkalis. Recommendable for the use in neutral atmospheres up to 1,500°… and also in molten zinc, aluminum, lead, copper, etc., porous.
Self-bonded Silicon Carbide	Y2 SiC	1,650	2,300	Very low porosity. Exc-nent resistance to thermal shock, corrosion and abrasion at high temperatures. Recommendable for use in oxidizing and reducing atmospheres uo to 1.500°….
Clay-bonded Silicon Carbide	Y3 SiC	1,500	1,700	Good heat conductivity. More accurate measurement than oxide-type tube can be expected. Excellent resistance to thermal shock, porous.
Nitride Bonded Silicon Carbide	Y4SiC	1,550	1,750	Excellent performance similar to Y3 Sic but contains Si3N4. Most suitable for use in molten aluminum, porous.
Ziroconia	ZR 1706	1,900	2,400	Gas-tight and chemically stable against molten metals other than alkalis. Recommendable for use in molten special metals, slag and glass up to 1,900°….

Note: Operating and maximum temperatures vary depending on the atmospheres.
Other non-metallic tubes are also available upon request.

ORDERING INFORMATION

SS-5091A x PT1/2(F) x JIS10K 25A RF x 300L x Ø17 x 16SS

MATERIAL:
- 304SS : STS304
- 316SS : STS316
- 316SS : STS316
- 310SS : STS310
- 321SS : STS321
- 446SS : STS446
- INCONEL600
- HASTELLOY X
- OTHER

BAR & TUBE OUT DIA
- Ø14
- Ø16
- Ø17
- Ø19
- PIPE S1ZE

INSERT LENGTH :
- 50 ~ 1200mm : SS-5091, SS-5092 Series
- 50 ~ 6000mm : SS-5093, SS-5094 Series

PROCESS CONNECTION TYPE :
- PT1/2
- PT3/4
- PT1
- FLANGE SIZE

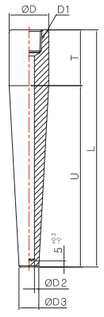
INSERT CONNECTION TYPE :
- PT1/2(F) : PT1/2(Female)
- NPT1/2(F) : NPT1/2(Female)
- PT1/2(M) : PT1/2(Male)
- NPT1/2(M) : NPT1/2(Male)

MODEL & MOUNTING TYPE :
- SS-5091 A : Drilled Bar Type & Welding Type
- SS-5091 C : Drilled Bar Type & Screw Type
- SS-5092A · B · C · D : Drilled Bar Type & Flange Type
- SS-5093A : Ended Close Type & Screw Type
- SS-5094A · D · F · T : Ended Close Type & Flange Type

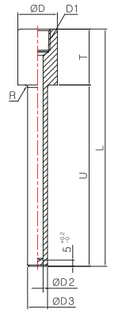
Model No. : Table 참조

Drilled Bar Type

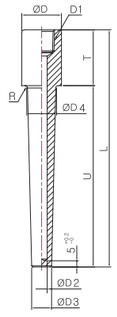
Model No. | SS-5091A



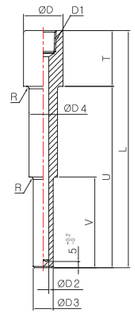
Model No. | SS-5091A-I



Model No. | SS-5091A-2



Model No. | SS-5091A-3



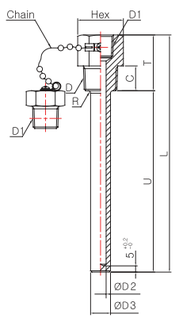
Model No. | SS-5091A-4

Model No. | SS-5091A-5

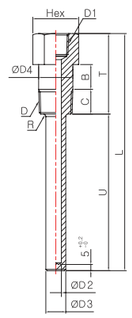
Model No. | SS-5091A-6

Model No. | SS-5091C

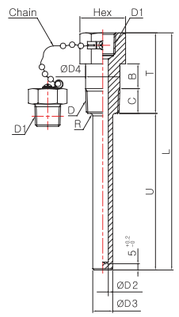
Model No. | SS-5091C-1



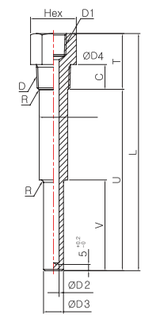
Model No. | SS-5091C-2



Model No. | SS-5091C-3

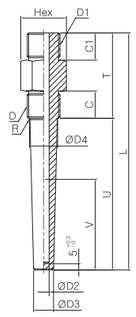


Model No. | SS-5091C-4

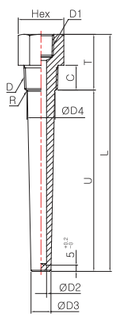


Drilled Bar Type

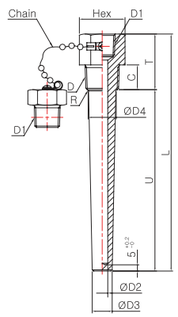
Model No. | SS-5091C-5



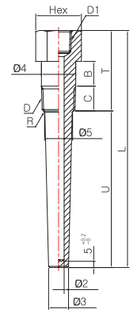
Model No. | SS-5091D



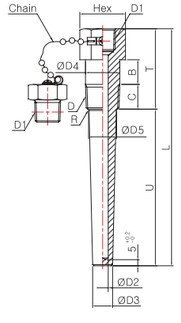
Model No. | SS-5091D-1



Model No. | SS-5091D-2

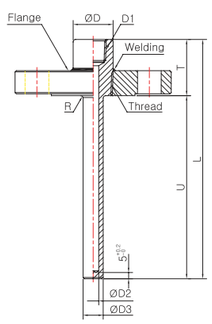


Model No. | SS-5091D-3

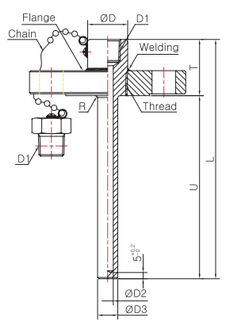


Flange Connect Type

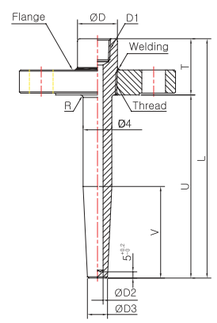
Model No. | SS-5092A



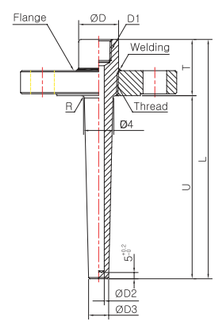
Model No. | SS-5092A-I



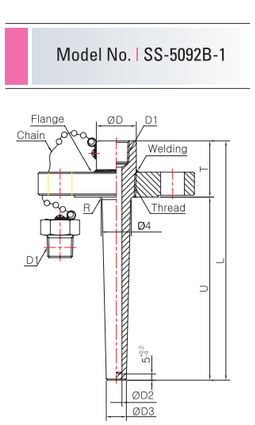
Model No. | SS-5092A-2



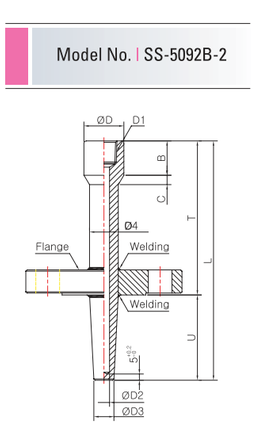
Model No. | SS-5092B



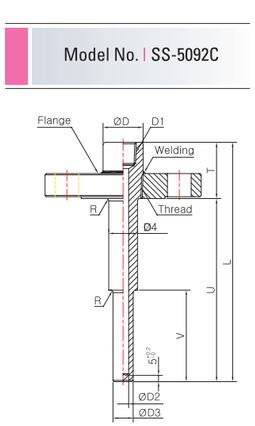
Model No. | SS-5092B-1



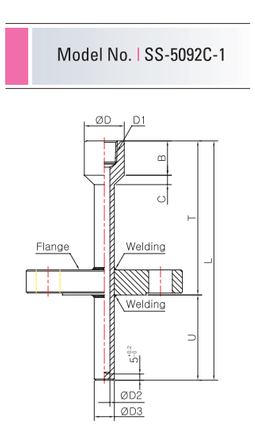
Model No. | SS-5092B-2



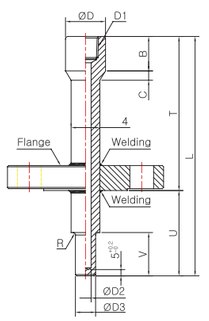
Model No. | SS-5092C



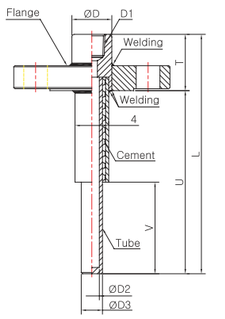
Model No. | SS-5092C-1



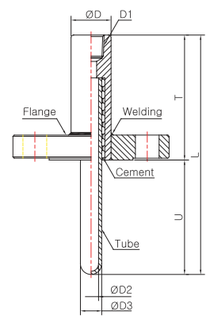
Model No. | SS-5092C-2



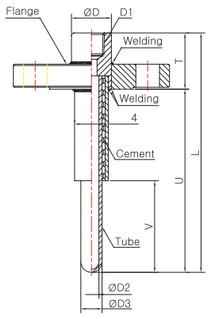
Model No. | SS-5092D



Model No. | SS-5092D-1

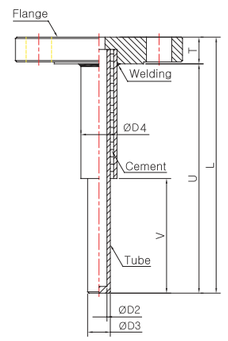


Model No. | SS-5092D-2

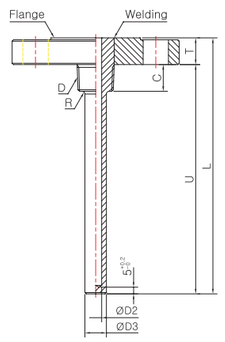


Flange Connect Type

Model No. | SS-5092D-3



Model No. | SS-5092E

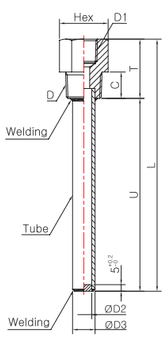


SS-5093 Series

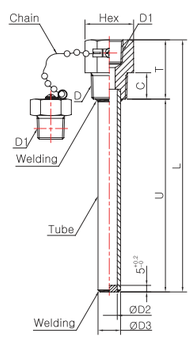
Model No.

Close End Tube Type

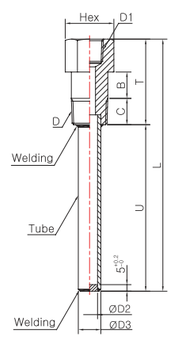
Model No. | SS-5093A



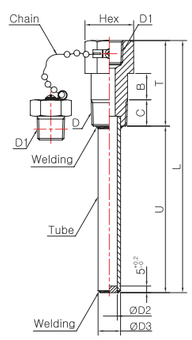
Model No. | SS-5093A-I



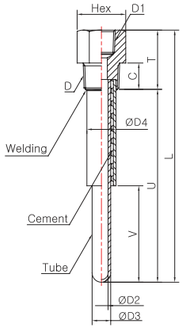
Model No. | SS-5093B



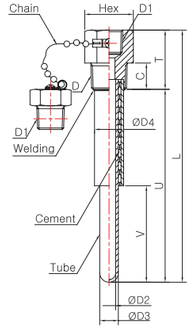
Model No. | SS-5093B-1



Model No. | SS-5093C



Model No. | SS-5093C-1

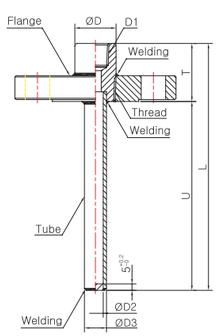


SS-5094 Series

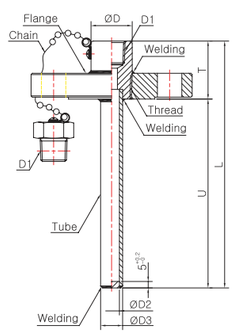
Model No.

Flange Connect Close

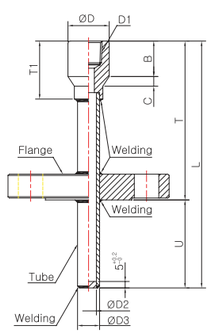
Model No. | SS-5094A



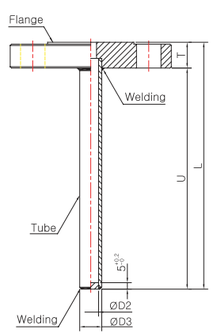
Model No. | SS-5094A-I



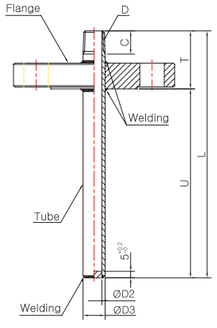
Model No. | SS-5094D



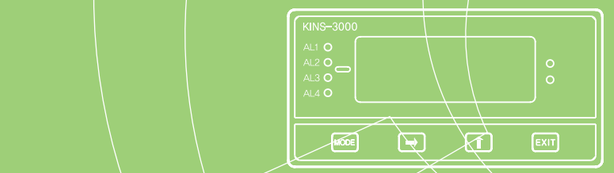
Model No. | SS-5094F



Model No. | SS-5094T



KINS
KONICS INSTRUMENT CO., LTD.



Indicator
Totalzer
Power Supply
Convertor
Transmitter

KINS
KONICS INSTRUMENT CO., LTD.

KINS-1000 Series

Bar Indicator

Features

- Multi-range input (T/C, RTD, Volt, mA, Etc)
- Clear bar by 100mm (40bar LED)
- Peak hold function (Highest & Lowest)
- RS-485 Communication interface
- 4 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- High brightness 40bar LED
- Sensor power source DC 24V in STD specification

Specifications

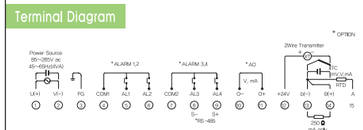
- **Bar color :** Red
- **Measuring and display cycle :** 200ms(mV, Volt, mA type) 400ms(TC, RTD type)
- **Input resistance :** Volt - 400kΩ Others type - 1MΩ
- **Signal source resistance :** Pt 100Ω type - 30Ω/line Others type - 300MΩ/line
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter**
- **Built-in Sensor power source :** DC 24V 30mA±0.5%
- **Accuracy :** Display ±0.2% F.S Bar ±2.4% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Alarm(Option)**
  - Contact output type : Normal open (Normal close-Order made)
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication intwrface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0 ~ 15
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 35.5(W) × 143(H) × 111(D)mm

Ordering Code

Model	Type	Analog output	Power	Interface	Description
KINS-1000	1				Indicator
	2				Indicator with 2 Alarm
	3				Indicator with 4 Alarm
		0			None
		1			Output DC 4.00~20.00mA
		2			Etc (Consult to the factory)
			0		AC 85~265V (45~65Hz)
			1		DC 24V±8
				0	None
				1	RS-485
				2	Etc

* It is possible to build in current output or communication when 4 alarm.

Terminal Diagram



KINS-2000 Series

Indicator

Features

- Multi-range input (T/C, RTD, Volt, mA, Etc)
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- RS-485 Communication interface
- 2 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Hi/Low linit function
- Sensor power source DC 24V in STD specification

Specifications

- **Display color :** Red
- **Measuring and display cycle :** 200ms(mV, Volt, mA type) 400ms(TC, RTD type)
- **Input resistance :** Volt - 400kΩ Others type - 1MΩ
- **Signal source resistance :** Pt 100Ω type - 30Ω/line Others type - 300MΩ/line
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter(4, 8, 16, 32, 64)**
- **Built-in Sensor power source :** DC 24V 30mA±0.5%
- **Accuracy :** Display ±0.2% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Alarm(Option)**
  - Contact output type : Normal open (Normal close-Order made)
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication intwrface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0 ~ 15
- **Etc**
  - Weight : 250g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Type	Analog output	Power	Description
KINS-2000	1			Indicator
	3			Indicator with 2 Alarm
		0		None
		1		Isolation current output DC 4.00~20.00mA
		2		Isolation current 2 output DC 4.00~20.00mA
		3		Etc(Consult to the factory)
			0	AC 85~265V(45~65Hz)
			1	DC 24V
			2	Etc

Terminal Diagram

KINS-2400 Series

Indicator

Features

- Potention meter input
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- RS-485 Communication interface
- 4 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling

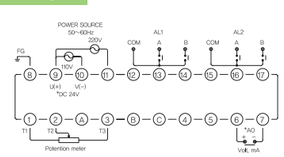
Specifications

- **Input(Potention meter) :** 1kΩ (Span Range : 100~999.9Ω) 100kΩ (Span Range : 0~100.0Ω)
- **Measuring and display cycle :** 100ms
- **Input resistance :** Max. 1MΩ
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter**
- **Built-in Sensor power source :** DC 24V 30mA±0.5%
- **Accuracy :** Display ±0.2% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Alarm**
  - Contact output type : Normal open (Normal close-Order made)
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 100/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication intwrface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0 ~ 15
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Type	Analog output	Power	Description
KINS-2400	1			Indicator
	2			Indicator with 2 Alarm
		0		None
		1		Isolation current output DC 4.00~20.00mA
		2		Etc(Consult to the factory)
			0	AC 110/220V
			1	DC 24V
			2	Etc

Terminal Diagram



KINS-2500 Series

Indicator

Features

- Multi input (Pulse coltage, Contact, Open collector, DC 4.00~20.00mA)
- High response
- Peak hold function (Highest & Lowest)
- Pulse output (O.C, Contact, Pulse coltage)
- 1 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA)
- Sensor power source DC 12V in STD specification (*DC 24V Option)

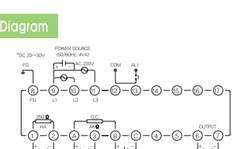
Specifications

- **mA Input :** DC 4.00~20.00mA
- **Pulse Input :** Low level voltage : DC 0.7V or less High level voltage : DC 1.5V or more Max. high coltage : DC 30V Input resistance : 150kΩ
- **Measuring and display cycle :** Minumum 1S. more short according to input frequence
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter** None, Average 4, Average 8, Average 16
- **Built-in Sensor power source :** DC 12V 30mA±0.5%
- **Accuracy :** ±0.2% F.S
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Isolation voltage output(Option)**
  - Voltage : DC 0~10V
  - Minimum load resistance : 1kΩ or more
  - Insolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Pulse Output**
  - Open collector output : Max. 100Hz, DC 50V/within 30mA
  - Voltage output : Max. 100Hz, Lo(DC 0V), Hi(DC 24V)
  - Relay contact output : Max. 5Hz same as alarm
- **Alarm(Option)**
  - Contact output type : Normal open, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Input	Analog output	Power	Description
KINS-2500	0			Pulse input
	1			DC 4.00~2.000mA input
		0		None
		1		DC 4.00~2.000mA 1 Alarm
		2		1 Alarm
		3		DC 4.00~2.000mA 1 Alarm
		4		Etc(Consult to the factory)
			0	AC 110/220V by S/W
			1	DC 24V(Option)

Terminal Diagram



KINS-2700 Series

Indicator

Features

- Multi-range input (T/C, RTD, Volt, mA, Etc)
- High Accuary 16bit A/D Converter
- Peak hold function (Highest & Lowest)
- R-485 Communucation interface
- Alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Sensor power source DC 24V in STD specification

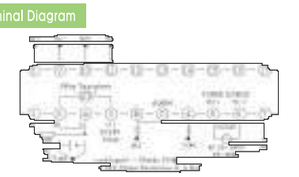
Specifications

- **Display color :** Red
- **Measuring and display cycle :** 100ms (mV, Volt, mA type) 200ms (TC, RTD type)
- **Input resistance :** Volt - 400kΩ Others type - 1MΩ
- **Signal source resistance :** PT 100Ω type - 30Ω/line Others type - 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter**
- **Built-in Sensor power source :** DC 24V 30mA±0.5%
- **Accuracy :** Display ±0.2% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Alarm(Option)**
  - Contact output type : Normal open (Normal close-Order made)
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication interface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0~15
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Type	Analog output	Power	Interface	Description
KINS-2700	1				Indicator
	2				Indicator with 1 Alarm
		0			None
		1			Isolation current output DC 4.00~20.00mA
		2			Isolation current 2 output DC 4.00~20.00mA
		3			Etc(Consult to the factory)
			0		AC 85~265V(45~65Hz)
			1		DC 24V
			2		Etc
				0	None
				1	RS-485
				2	Etc

Terminal Diagram



KINS-2900 Series

Indicator

Features

- Input 12 points linear table and output property curve you want.
- High Accuary 16bit A/D Converter
- 2 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Sensor power source DC 24V in STD specification

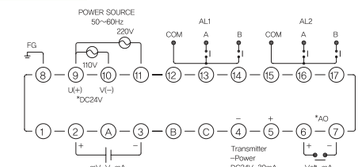
Specifications

- **Input :** mV, V, mA
- **Measuring and display cycle :** 200ms (mV, Volt, mA type)
- **Input resistance :** Volt - 400kΩ Others type - 1MΩ mA - 250Ω
- **Signal source resistance :** 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter**
- **Built-in Sensor power source :** DC 24V 30mA±0.5%
- **Accuracy :** Display ±0.2% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Alarm(Option)**
  - Contact output type : Normal open (Normal close-Order made)
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication interface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0~15
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Type	Analog output	Power	Description
KINS-2900	1			Indicator
	2			Indicator with 2 Alarm
		0		None
		1		Isolation current output DC 4.00~20.00mA
		2		Etc(Consult to the factory)
			0	AC 110/220V
			1	DC 24V
			2	Etc

Terminal Diagram



Indicator

KINS
KONICS INSTRUMENT CO., LTD.

KINS-4000 Series

Totalizer

Features

- 10 Digit total integrating & 4 digit rate display
- Multi-range input (Pulse, Volt, mA)
- High accuracy 16bit A/D converter
- Built-in Batch function
- RS-485 Communication interface
- 2 points alarm & Rate alarm, Batch funcion and Dead band set.
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Pulse output function (Open collect) in STD specification
- Sensor power source DC 12V (DC 24V : option) in STD specification

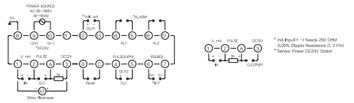
Specifications

- **Measuring and display cycle :**
  - Rate value : 200ms(mV, Volt, mA type)
  - Total count : 1s (Volt, mA input)
  - Pulse input : on basis of frequency
- **Input :**
  Volt, mA input - 100kΩ
  Pulse input - 1MΩ
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Built-in Sensor power source :**
  DC 12V (24V option)
- **Rate accuracy :**
  - Linearity : 0.05% F.S
  - Repeatability : 0.1% F.S
  - Temperature drift : 0.02% F.S/°C
  - Long term drift : 0.1% per 1000Hr
- **Pulse putput (STD)**
  - Output : Isolation open collect
  - Rated voltage : Max DC 50V/50mA
  - Max. frequency : 5Hz or Less
- **Ambient temperature & Humidity**
  - Operation : -10~50°C, 10~90%
  - Storage : -20~70°C, 5~95%
- **Alarm(Option)**
  - Contact output type : Normal open (Normal close-Order made)
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication intwrface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0 ~ 15
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Type	Alarm Relay	Analog output (only 16dBit)	Power	Interface	Description
KINS-4000	1					Counter
	2					Totalizer
		0				None
		1				2 Point Alarm relay
			0			None
			1			Isolation current output DC 4.00~20.00mA
			2			Etc
				0		AC 85~265V(45~65Hz)
				1		DC 24Volt
				2		Etc
					0	None
					1	RS-485(BPS 4800)
					2	Etc

Terminal Diagram



KINS-4800 Series

Digital Thermometer

Features

- Multi-range input (T/C, RTD, Volt, mA, Etc)
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- Burnout function
- 2 points alarm & Dead band set

Specifications

- **Measuring and display cycle :**
  100ms
- **Input resistance :**
  Max. 1MΩ
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Accuracy :**
  ±0.2% F.S
- **Alarm output : 2-SPDT, 1-SPDT**
  - Contact output type : Normal open, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Ambient temperature & Humidity**
  - Operation : -10~50°C, 10~90%
  - Storage : -20~70°C, 5~95%
- **Materia**
  - Case & Cover : STS 304
  - Stem : STS 304, STS 306
  - Socket : STS 304, STS 306, STS 304L, STS 306L Titanium, Monel, Hastelloy, Teflon Lining, Glass Lining
- **Dial Size**
  Ø100
- **Connection Size**
  PF 1/2" (STD)
- **Stem out dia.**
  Ø3.2, Ø4.8, Ø6.4, Ø8.0 mm
- **Enclose class**
  Drip proof
- **Etc**
  - Weight : 600g
  - Mouting : Local mount

Ordering Code

Model	Type	Power	Input	Stem (dia x Length + Correction size)	Wall	Description
KINS-4800	1					Direct mount type
	2					Remotemount type
		0				AC 110/220V
		1				DC 24V
		2				Etc
			1			PT (Pt, JPT)
			2			T/C (R, S, T, E, IC, K)
			3			Etc
				1		Ø3.2, Ø4.8, Ø6.4, Ø8.0 mm
				2		Others
					0	None
					1	Welll spec'

Terminal Diagram

* DC 24V Power (Option)
* Alarm Rating : AC 250V 2A(Resistance Load)

KINS-5000 Series

5ch Indicator

Features

- 5 channel indicidually setting signal input
- Multi-range input (T/C, RTD, Volt, mA)
- Display & Output scaling (mV, V, mA)
- Peak hold function (Highest & Lowest)
- RS-485 Communication interface
- 2 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling (Choice - Ch, Hi, Low, Av)
- Sensor compensation function

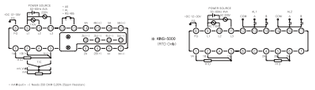
Specifications

- **Measuring and display cycle : 1sec**
  Display cycle : 1~9 sec se
- **Input resistance :**
  Volt : 400kΩ
  Others type - 1MΩ
- **Signal source resistance :**
  PT 100Ω type - 30Ω/line
  Others type - 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Built-in Sensor power source :**
  DC 24V 30mA±0.5%
- **Accuracy :**
  ±0.2% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50°C, 10~90%
  - Storage : -20~70°C, 5~95%
- **Alarm (Option)**
  - Contact output type : Normal open (Normal close-Order made)
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 100/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication intwrface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0 ~ 15
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Input	Type	Power	Description
KINS-5000	0			5 Channel Input
	1			2 Channel RTD
		0		Indicator
		1		Indicator with Alarm
		2		Isolated current output
		3		Indicator with RS-485
			0	AC 110/220V
			1	DC 24V

Terminal Diagram



KINS-6000 Series

Indicator

Features

- Multi-range input (T/C, RTD, Volt, mA)
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- R-485 Communication interface
- 2 points alarm & Dead band set
- Burnout function
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Sensor power source DC 24V in STD specification

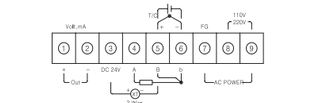
Specifications

- **Measuring and display cycle :**
  200ms (mV, Volt, mA type)
  400ms (TC, RTD type)
- **Input resistance :**
  Volt - 400kΩ
  Others type - 1MΩ
- **Signal source resistance :**
  PT 100Ω type - 30Ω/line
  Others type - 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Built-in Sensor power source :**
  DC 24V 30mA±0.5%
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation voltage output(Option)**
  - Voltage : DC 0~10V
  - Minimum load resistance : 1kΩ or more
  - Isolation resistance(Input-Output, Two-output) : 100MΩ or more (DC 500V)
- **Alarm output : 2-SPDT, 1-SPDT**
  - Contact output type : Normal open, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Ambient temperature & Humidity**
  - Operation : -10~50°C, 10~90%
  - Storage : -20~70°C, 5~95%
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 6VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication interface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0~15
- **Etc**
  - Weight : Approx 3.0kg (6inch)

Ordering Code

Model	Fnd size	Output	Power	Description
KINS-6000	1			6.00 inch
	2			3.00 inch
	3			2.30 inch
		0		Isolation DC 4.00~20.00mA current 1 output
		1		Isolation DC 4.00~20.00mA current 2 output
		2		Isolation DC 0~10Volt 1 output
		3		Isolation DC 0~10Volt 2 output
		4		Isolation DC 4.00~20.00mA current 1 output Alarm 1 output
		5		2 Alarm relay output
		6		RS-485 interface
			0	AC 110/220V
			1	Etc

Terminal Diagram



\+ mA Input(+ -) Needs 250Ω 0.05% 25ppm Resistance (2, 3 Pin)

KINS-7000 Series

Power Supply

The KINS-7000 power supply unit heightened authoritativeness to use high efficiency integrated circuit.
110V or 200V, Single output or Dual output is possible by user selection.

Features

- Stable DC voltage supply
- 2-wire system
- Single or Dual output optional feature

Specifications

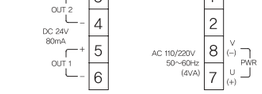
- **Output voltage(Current) :**
  24V ±2.0%(80mA)
  Other user appointment
- **Accuray :**
  ±0.2% F.S
- **Repeatability :**
  ±0.2% F.S
- **Temperature drift :**
  0.02% F.S/°C
- **Long term drift :**
  0.2%per 1000Hr
- **Ambient temperature & Humidity**
  - Operation : -10~50°C, 10~90%
  - Storage : -20~70°C, 5~95%
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (Power-Input)
- **Etc**
  - Weight : 500g
  - Mouting : Din rail & wall mounted
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Analog output	Power	Description
KINS-7000	0		24Volt
	1		12Volt
	2		5Volt
	3		Etc
		0	110/220V
		1	DC 24V
		2	Etc

Terminal Diagram

* Power Supply



KINS-8000 Series

Slim Type Isolated Converter

Features

- Multi-range input T/C, RTD, Volt, mA, Etc (Pot, Pulse, Multi Function)
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- RS-485 Communication interface
- 2, 4 points alarm & Dead band set
- Burnout function
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Sensor power source DC 24V in STD specification
- Free voltage (AC 85~265V, 45~65Hz)

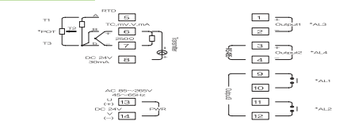
Specifications

- **Measuring and display cycle :**
  200ms (mV, Volt, mA type)
  400ms (TC, RTD type)
- **Input resistance :**
  Volt - 400kΩ
  Others type - 1MΩ
- **Signal source resistance :**
  PT 100Ω type - 30Ω/line
  Others type - 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Built-in Sensor power source :**
  DC 24V 30mA±0.5%
- **Accuracy :**
  ±0.2% F.S
- **Isolation current output(Option)**
  (2 output is isolation between output)
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation current output(Option)**
  - Current : DC 0~10V
  - Maximum load resistance : 1kΩ
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Alarm output (Alarm setter)**
  - Contact output type : Normal open, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Ambient temperature & Humidity**
  - Operation : -10~50°C, 10~90%
  - Storage : -20~70°C, 5~95%
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 96(W) × 48(H) × 112(D)mm

Ordering Code

Model	Analog output	Power	Description
KINS-8000	0		DC 4.00~20.00mA
	1		DC 4.00~20.00mA (2 Out)
	2		1~5 Volt
	3		1~5 Volt(2 Out)
	4		0~10 Volt
	5		0~10 Volt (2 Out)
	6		4.00~20.00mA + 1 Alarm
	7		4.00~20.00mA + 2 Alarm
	8		1~5 Volt + 1 Alarm
	9		1~5 Volt + 2 Alarm
	10		4.00~20.00mA + RS-485
	11		1~5 Volt + RS-485
	12		Etc (4 ea, 1640)
		0	AC 85~265V(45~65Hz)
		1	DC 12~32V
		2	Etc

Terminal Diagram



KINS
KONICS INSTRUMENT CO., LTD.

KINS-9000 Series

Converter

Features

- Multi-range input (T/C, RTD, Volt, mA, Etc)
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- Burnout function
- RS-485 Communication interface
- 2, 4 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Sensor power source DC 24V in STD specification
- Exit IN/OUT hold

Specifications

- **Measuring and display cycle :**
  200ms(mV, Volt, mA type)
  400ms(TC, RTD type)
- **Input resistance :**
  Volt - 400kΩ
  Others type - 1MΩ
- **Signal source resistance :**
  Pt 100Ω type - 30Ω/line
  Others type - 300MΩ/line
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Built-in Sensor power source :**
  DC 24V 30mA±0.5%
- **Accuracy :**
  ±0.2% F.S
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Isolation current output(Option)**
  (2 output is isolation betwwn output)
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation current output(Option)**
  - Current : DC 0~10V
  - Maximum load resistance : 1kΩ or more
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Alarm output (Alarm setter)**
  - Contact output type : Normal close, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz)
    DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V
    (FG-Input, FG-Power, Power-Input, Input-Output)
- **Communication intwrface(Option)**
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0 ~ 15
- **Etc**
  - Weight : 500g
  - Mouting : Din rail & wall mounted
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Analog output	Power	Description
KINS-9100	0		Isolation current Single output (DC 4.00~20.00mA)
	1		Isolation current Double output (DC 4.00~20.00mA)
	2		Isolation voltage Single output (0~10V)
	3		Isolation voltage Double output (0~10V)
	4		Exit IN/OUT Hold
	5		RS-485(422)
	6		Isolation current Three output (DC 4.00~20.00mA)
	7		Etc
		0	AC 85~265V(45~65Hz)
		1	DC 24V

Model	Analog output	Power	Description
KINS-9200	0		Isolation current 1 output (DC 4.00~20.00mA) + Alarm 1 output
	1		Isolation voltage single output (0~10V) + Alarm 1 output
	2		Etc(Consult to the factory)
	3		alarm relay contact - 2AL
	4		alarm relay contact - 4AL
		0	AC 110/220V
		1	DC 24V

KINS-9300 Series

Converter

Features

- Potention meter input
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- RS-485 Communication interface
- 2 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling

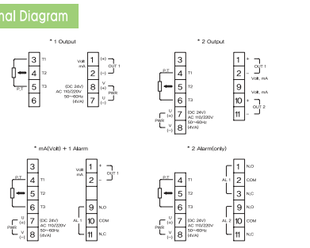
Specifications

- **Input (Potention meter) :**
  100Ω ~ 100kΩ, 1.25V
- **Measuring and display cycle :**
  100ms
- **Input resistance :**
  1MΩ
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Accuracy :**
  ±0.2% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Alarm output (Alarm setter)**
  - Contact output type : Normal open, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz)
    DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V
    (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Analog output	Power	Description
KINS-9300	0		Isolation current Single output (DC 4.00~20.00mA)
	1		Isolation Voltage Double output (DC 4.00~20.00mA)
	2		Isolation DC 4.00~20.00mA + 1 Alarm Contact
	3		2 Alarm Contact
	4		Etc
		0	AC 110/220V by S/W
		1	DC 24V

Terminal Diagram



KINS-9400 Series

Converter

Features

- Multi input (Pulse, Coltage, Contact, Open collector, DC 4.00~20.00mA)
- High response
- Peak hold function (Highest & Lowest)
- Pulse output (O.C, Contact, Pulse voltage)
- 1 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA)
- Sensor power source DC 12V in STD specification (*DC 24V Option)

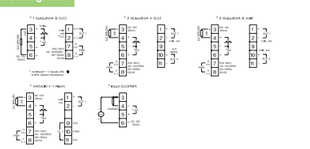
Specifications

- **mA Input :**
  DC 4.00~20.00mA
- **Pulse input :**
  Low level voltage : DC 0.7V or less
  High level voltage : DC 1.5V or more
  Max. high voltage : DC 30V
  Input resistance : 150kΩ
- **Measuring and display cycle :**
  Minimum 1s.
  more short according to input frequence
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
  None, Average 4, Average 8, Average 16
- **Accuracy :**
  Display ±0.2% F.S
- **Isolation current output(Option)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Isolation current output(Option)**
  - Voltage : DC 0~10V
  - Maximum load resistance : 1kΩ or more
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Pulse output**
  - Open collector output :
    Max 100Hz, DC 50V/with in 30mA
  - Voltage output : Max 100Hz, Lo(DC 0V), Hi(DC 24V)
  - Relay contact output : Max 5Hz same as alarm
- **Alarm Output**
  - Contact output type : Normal open, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Built-in Sensor power source :**
  DC 12V 30mA±0.5%
- **Power supply**
  - Voltage : AC 85~265V (45~65Hz)
    DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V
    (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mouting : Panel mount
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Input	Analog output	Power	Description
KINS-9400	1			Pulse input
	3			DC 4.00~2.00mA input
		0		Isolation current output DC 4.00~20.00mA
		1		Isolation current output DC 4.00~20.00mA + Relay contact
		2		Isolation current output DC 4.00~20.00mA + OC pulse output
		3		Isolation current output DC 4.00~20.00mA + Voltage pulse output
		4		Isolation current output DC 4.00~20.00mA + Relay contact pulse output
		5		Etc(Consult to the factory)
			0	AC 110/220V by S/W
			1	DC 24V(Option)

Terminal Diagram



KINS-9500 Series

Converter

Features

- Loadcell input (200Ω~10kΩ)
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- 2 points alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA) & Output scaling

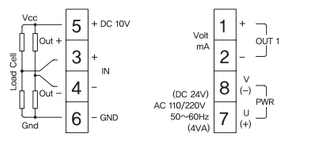
Specifications

- **Measuring and display cycle :**
  100ms
- **Input resistance :**
  1MΩ
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Built-in Sensor power source :**
  DC 24V 30mA±0.5%
- **Accuracy :**
  ±0.2% F.S
- **Isolation current output(Option)**
  (2 output is isolation between output)
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation voltage output(Option)**
  - Voltage : DC 0~10V
  - Minimum load resistance : 1kΩ or more
  - Isolation resistance(Input-Output, Two-output) : 100MΩ or more (DC 500V)
- **Alarm output (Alarm setter)**
  - Contact output type : Normal open, Normal close
  - Max. switching power : 60W 125VA
  - Max. switching voltage : DC 220V, AC 250V
  - Max. switching current : DC 2A, AC
  - Max. Carrying current : DC 3A, AC
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz)
    DC 24V (Option)
  - Power consumption : Max. 6VA
  - Isolation resistance : 100MΩ, DC 500V
    (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mounting : Din rail & wall mounted
  - Dimension: 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Analog output	Power	Description
KINS-9500	0		Isolation current Single output (DC 4.00~20.00mA)
	1		Isolation current Single output (DC 0~10V)
	2		Etc
		0	AC 110/220V by S/W
		1	DC 24Volt

Terminal Diagram



KINS-9600 Series

Converter

Features

- Multi-range input (T/C, RTD, Volt, mA)
- High accuracy 16bit A/D converter
- The ratio of input to output setting 0.5~1.5 and output according to input
- Isolation current output (DC 4.00~20.00mA) & Output scaling

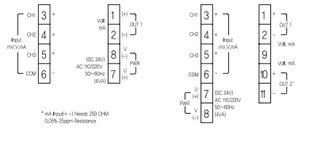
Specifications

- **Measuring and display cycle :**
  100ms (mV, Volt, mA type)
  200ms (TC, RTD type)
- **Input resistance :**
  Volt - 400kΩ
  Others type - 1MΩ
- **Signal source resistance :**
  PT 100Ω type - 30Ω/line
  Others type - 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
- **Built-in Sensor power source :**
  DC 24V 30mA±0.5%
- **Accuracy :**
  ±0.2% F.S
- **Isolation current output(Option)**
  (2 output is isolation between output)
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation current output(Option)**
  - Current : DC 0~10V
  - Maximum load resistance : 1kΩ
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz)
    DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V
    (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mounting : Din rail & wall mounted
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Analog output	Power	Description
KINS-9600	0		Isolation current single output (DC 4.00~20.00mA)
	1		Isolation current Double output (DC 4.00~20.00mA)
	2		Isolation Voltage single output (DC 0.0~10.0V)
	3		Isolation Voltage Double output (DC 0.0~10.0V)
	4		Etc(Consult to the factory)
		0	AC 110/220V by S/W
		1	DC 24V

Terminal Diagram



KINS-9700 Series

Converter

Features

- Synchronous transmitter or receive signal input
- Response is prompt
- 360 angles zero & span set is acailable
- DC 4.00~20.00mA output scaling is possible
- Display and output because use input filter

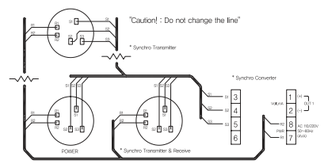
Specifications

- **Input (Potention meter) :**
  AC 0~90V Synchro transmitter second
- **Input frequence :**
  50~60Hz
- **Measuring and display cycle :**
  200ms (mV, Volt, mA type)
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
  Average 4
- **Accuracy :**
  ±0.2% F.S
- **Isolation current output(Option)**
  (2 output is isolation between output)
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation current output(Option)**
  - Current : DC 0~10V
  - Maximum load resistance : 1kΩ
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz)
    DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V
    (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mouting : Din rail & wall mounted
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Input	Power	Output	Description
KINS-9700	0			Synchronous
	1			Etc
		0		AC 110/220V by S/W
			0	Isolation current single output (DC 4.00~20.00mA)
			1	Isolation voltage output (DC 0~10V)
			2	Etc

Terminal Diagram



KINS
KONICS INSTRUMENT CO., LTD.

KINS-9800 Series

Converter

Features

- 3ch Signal acceptance (TC, mV, V, mA)
- High accuracy 16bit A/D converter
- Various operation functions (Add, Sub, Muliplication, Dicision)
- Flow, Temperature and Pressure compensation function
- Each channel setting input, Gain and Bias
- Isolation current output & Output scaling

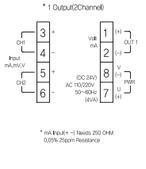
Specifications

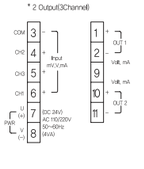
- **Measuring and display cycle :** 400ms / 3ch
- **Input resistance :** 100kΩ
- **Signal source resistance :** 100Ω / line
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter**
- **Accuracy :** ±0.2% F.S
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Isolation current output(Option)** **(2 output is isolation betwn output)**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation voltage output(Option)** **(2 output is isolation betwn output)**
  - Voltage : DC 0~10V
  - Maximum load resistance : 1kΩ or more
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz) by S/W DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mouting : Din rail & wall mounted
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Analog output	Power	Description
KINS-9800	0		Isolation current Single output (DC 4.00~20.00mA) (8P Socket)
	1		Isolation current Double output (DC 4.00~20.00mA) (16P Socket)
	2		Isolation Voltage output(DC 0~10V) (8P Socket)
	3		Isolation Voltage Double output(DC 0~10V) (16P Socket)
	4		Etc(Consult to the factory)
		0	AC 110/220V by S/W
		1	DC 24V

Terminal Diagram





KINS-9900 Series

Converter

Features

- Input 12 points linear table and output property curve you want
- High accuracy 16bit A/D converter
- Peak hold function (Highest & Lowest)
- Isolation current output (DC 4.00~20.00mA) & Output scaling
- Sensor power source DC 24V in STD specification

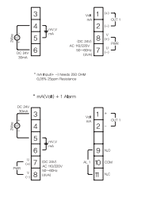
Specifications

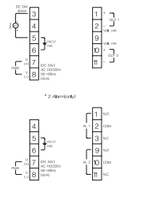
- **Input (Potention meter) :** mV, Volt, mA
- **Measuring and display cycle :** 200ms (mV, Volt, mA type)
- **Input resistance :** Volt - 400kΩ Others type - 1MΩ
- **Signal source resistance :** 300Ω / line
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter**
- **Accuracy :** ±0.2% F.S
- **Isolation current output**
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Isolation voltage output(Option)**
  - Voltage : DC 0~5V, DC 0~10V
  - Maximum load resistance : 1kΩ or more
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- **Ambient temperature & Humidity**
  - Operation : -10~50℃, 10~90%
  - Storage : -20~70℃, 5~95%
- **Power supply**
  - Voltage : AC 110/220V (50~60Hz) DC 24V (Option)
  - Power consumption : Max. 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- **Etc**
  - Weight : 500g
  - Mouting : Din rail & wall mounted
  - Dimension : 50(W) × 80(H) × 102(D)mm

Ordering Code

Model	Input	Analog output	Power	Description
KINS-9900	1			mV, Volt
	2			mA(250 Ω)
	3			Etc
		0		Isolation current output DC 4.00~20.00A
		1		Isolation current Double output DC 4.00~20.00mA
		2		Etc(Consult to the factory)
			0	AC 110/220V by S/W
			1	DC 24V

Terminal Diagram





KIP-400 Series

Pressure Transmitter

The KIP-400 series of pressure trasmitter, adjusttable Zero and Span in the field are extremely versatile and suitable for measuring. Moreover it uses high accuracy trusty with stainless steel diaphragm which is possible to measure 0~0.06 to 25kg/㎠ and 0~1,000kg/㎠ .

Features

- Easy to adjust Zero and Span
- Temperature compensated
- Excellent corrosion and steel diaphragm
- High accuracy and low temperature drift
- Shock and vibration resistants

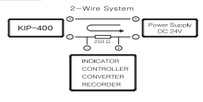
Specifications

- **Media :** Gas, Oil, Water
- **Measuring range :** 0~0.06 to 25kg/㎠, 0~1 to 1000kg/㎠
- **Over load :** 300% of max span
- **Electric specification character :** Power : DC 18~26V, Ripple≤500mV p-p Output : DC 4.00~20.00mA Load resistance : 500Ω at DC 24V
- **Accuracy :** Linearity : 0.100% FSS Repeatability : 0.015% FSS Hysteresis : 0.010% FSS Thermal sensitivity shift : 0.500% FSS Thermal zero shift : 0.500% FSS
- **Shock resistance** ±20G
- **Cutoff frequency (-3dB)** 0 > 5kHz
- **Temperature compensated** 0 ~ 82℃
- **Operating temperature range :** -40 ~ 125℃
- **Material of construction isolating** Diaphragm : STS 316L Wetted plug : STS 316 Gasket O-ring : Viton Case(Head) : AL die-casting
- **Process connection** PT 3/8"(STD), PT 1/4", PT 1/2"
- **Weight** About 270g

Ordering Code

Model	Type	Range	Connection	Description
KIP-400	G1			Gauge pressure
	A1			Absolute pressure
		01		0~0.2kg/㎠
		02		0~0.5kg/㎠
		03		0~1kg/㎠
		04		0~2kg/㎠
		05		0~5kg/㎠
		06		0~10kg/㎠
		07		0~20kg/㎠
		08		0~30kg/㎠
		09		0~50kg/㎠
		10		0~100kg/㎠
		11		0~200kg/㎠
		12		0~300kg/㎠
		21		-76cmHg~0kg/㎠
		22		-76cmHg~1kg/㎠
		23		-76cmHg~3kg/㎠
		24		-76cmHg~5kg/㎠
		25		-76cmHg~10kg/㎠
		26		-76cmHg~20kg/㎠
		ZZ		Special
			A	PT3/8"(STD)
			B	PT1/4"
			C	PF3/8"
			X	Explosion proof
			Z	Connector type
			S	Lead wire

Terminal Diagram



KIP-500 Series

Pressure Transmitter

Features

- Range ability in the ratio of 3:1
- High accuracy 16bit A/D converter
- Selectable moving average filter
- Bulit-in multiple function
- DC 4.00~20.00mA 2-wire loop power
- Zero trim function
- 4 Digit LCD for parameter alteration and PV output on the spot

Specifications

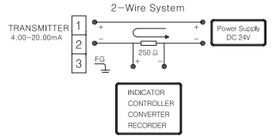
- **Measuring and displaying interval :** 200ms
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter** Selectable (None 4, 8, 16)
- **Vibration(20..5000Hz) :** 20Hz
- **Diaphragm :** Stainless Steel STS 316L
- **Oil Filling** Silicon Oil
- **Dead volume change@25℃ :** < 0.1mm3/FS
- **Sensor operating temperature :** -30~100℃
- **Accuracy** ±0.25% F.S
- **Power** DC 9~35V
- **Over pressure** Max range 150%
- **Output** 2-wire DC 4.00~20.00mA load limit (Vsp9V)/0.021=RΩ
- **Body meterial** All STS 316
- **Process connection :** PT 1/2" STD
- **Operating condition :** Operating Temp/Humidity : -10~60℃, 10~90% Storage Temp/Humidity : -20~70℃, 5~95%
- **Etc** - Weight : 1.7kg

Ordering Code

Model	Type	Indicator	Range span	Connection	Description	Etc
KIP-500					Traditional-Mounting	
	G				Gauge	
	A				Absolute	
		0			Without LCD	
		1			With LCD	
			0		0.0~0.2bar	
			1		0.0~0.5bar	
			2		0.0~2.0bar	-760mmHg~2bar
			3		0.0~5.0bar	-760mmHg~5bar
			4		0.0~20.0bar	-760mmHg~20bar
			5		0.0~50.0bar	
			6		0.0~200.0bar	
				0	PT 1/2	STD
				1	PT 1/4	Adapter
				2	PF 3/8	Adapter
				3	Other	Adapter

* Range ability in the ratio of 3:1

Terminal Diagram



KIT-510/520 Series

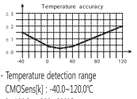
Temperature Transmitter

Features

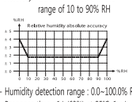
- Relative humidity and temperature sensors
- Excellent long-term stability
- High accuracy (1.8% RH)
- Selectable moving average filter
- Channel isolation current output (2-wire 4.00~20.00mA) & output scaling
- 4 Digit LCD for parameter alteration and PV output on the spot
- Temperature and humidity according to set up cycle alternately display (1~10sec)
- Sensor sompensation (Humidity and temp)

Specifications

- **Temperature**
  - Element : Micro-machining CMOS
  - Accuracy : at 25℃ ±0.3℃



  - Temperature detection range CMOSens[tk] : -40.0~120.0℃ Pt 100Ω : -200~600℃
- **Humidity**
  - Element : Micro-machining CMOS
  - Accuracy : ±1.8% RH at 25℃ in the range of 10 to 90% RH



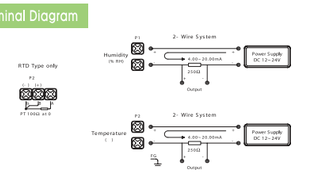
  - Humidity detection range : 0.0~100.0% RH
  - Response time : 1/e(63%) at 25℃, 1m/s air
  - Long term stability : <0.5% RH/yr
  - Type of fluid : Air and meutral gases
- **Etc**
  - Moving average filter : Selectable (None 4, 8, 16, 32)
  - Power : DC 9~35V
  - Output : Pt 100Ω DC 4.00~20.00mA load limit(Vsp 9V)/0.022=RΩ
  - Operation condition : Operating temp/Humidity Room : -10~60℃, 10~90% Duct : -10~60℃, 10~100% Storage Temp/Humidity : -20~70℃, 5~95%
  - Case material Room : ABS + STS 316 Duct : All + STS 316

Ordering Code

Model	Type	Output	Others	Description
KIT-510				Duct type
KIT-520				Room type
	1			RTD (Temperature only)
	2			DC 4.00~20.00 (Humidity only)
	3			RTD (Temperature), DC 4.00~20.00 (Humidity)
	4			DC 4.00~20.00 (Temperature & Humidity)
		0		None
		1 ( )		Sensor length 150mm standard
		2 ( )		Others sensor length L=( )
			0	Without slide flange
			1	With slide flange

( ) Duct type only.

Terminal Diagram



KIT-530/540 Series

Temperature Transmitter

Features

- Multi-range input (TC, RTD, Volt, mV, mA, Etc)
- High accuracy 16bit A/D converter
- Selectable moving average filter
- Built-in multiple function
- DC 4.00~20.00mA 2-wire loop power
- 4 Digit LCD for parameter alteration and PV output on the spot

Specifications

- **Measuring and displaying interval :** 200ms (mV, Volt, mA type) 400ms (TC, RTD type)
- **Input resistance :** Volt - 400kΩ Others type - 1MΩ
- **Signal source resistance :** PT 100Ω type - 300Ω/line Others type - 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :** 140dB or more
- **NMRR(Normal Mode Rejection Ratio) :** 60dB or more
- **Moving average filter** Selectable (None 4, 8, 16)
- **Accuracy :** ±0.2% F.S
- **Power** DC 9~35V
- **Output** 2-wire DC 4.00~20.00mA load limit(Vsp9V)/0.022=RΩ
- **Case meterial :** All STS 316L
- **Operating condition :** Operating temp/Humidity : -10~60℃, 10~90% Storage Temp/Humidity : -20~70℃, 5~95%
- **Etc** - Weight : 1.5kg - Mouting : Filled Mount
- **Multi range input** Free input selection by code

Sensor	Type	Range	Scale	Symbol
TC	B(PR)	0~1800℃	–	℃-b
	R(PR)	0~1700℃	–	℃-r
	S(PR)	0~1700℃	–	℃-S
	K(CA)	-200~1300℃	–	℃-K
	E(CRC)	-199.9~700.0℃	–	℃-E
	J(IC)	-199.9~800.0℃	–	℃-J
	T(CC)	-199.9~400.0℃	–	℃-t
Volt	mV	-150.0~150.0mV	-1999~9999	-u
	Volt	-1.000~1.000V	-1999~9999	-v
	Volt	-10.0~10.0V	-1999~9999	-w
mA	mA	4.000~20.00mA	-1999~9999	-W
RT	Pt100 Ω	-199.9~800.0	–	℃-Pt
	JPt100 Ω	-199.9~500.0	–	℃-PJ

* mA type : External(250Ω)±0.1% 25ppm resistance is attached.

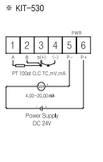
Ordering Code

Model	Input	Indicator	Description	Etc
KIT-530	0		Head Mounted	None LCD
KIT-540	0		Traditional Mounted	
		0	None	
		1	With LCD	Only 5400

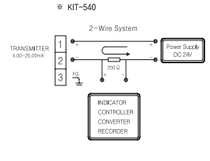
* Temperature sensor is separate way subject of discussion

Terminal Diagram

※ KIT-530



※ KIT-540



KIT-600 Series

Temperature Transmitter

Features

- Multi-range input (TC, RTD, Volt, mV, mA, Etc)
- High accuracy 16bit A/D converter
- Selectable moving average filter
- Built-in multiple function
- Isolation current output (2-wire 4.00~20.00mA) & output scaling
- 4 Digit LCD for parameter alteration and PV output on the spot

Specifications

- **Measuring and displaying interval :**
  200ms (mV, Volt, mA type)
  400ms (TC, RTD type)
- **Input resistance :**
  Volt - 400kΩ
  Others type - 1MΩ
- **Signal source resistance :**
  PT 100Ω type - 30Ω/line
  Others type - 300Ω/line
- **CMRR(Common Mode Rejection Ratio) :**
  140dB or more
- **NMRR(Normal Mode Rejection Ratio) :**
  60dB or more
- **Moving average filter**
  Selectable (None 4, 8, 16)
- **Accuracy :**
  ±0.1% F.S
- **Power**
  DC 9~35V
- **Output**
  2-wire DC 4.00~20.00mA
  load limit(Vsp9V)/0.022=RΩ
- **Isolation resistance(Input-Output) :**
  100MΩ or more (DC 500V)
- **Operating condition :**
  Operating temp/Humidity : -10~60℃, 10~90%
  Storage Temp/Humidity : -20~70℃, 5~95%
- **Body Meterial**
  ABS
- **Etc**
  - Weight : 1.5kg
  - Mouting : Filed Mount
- **Multi range input**
  Free input selection by code

Sensor	Type	Range	Scale	Symbol
TC	B(PR)	0~1800℃	–	℃-b
	R(PR)	0~1700℃	–	℃-r
	S(PR)	0~1700℃	–	℃-S
	K(CA)	-200~1350℃	–	℃-K
	E(CRC)	-199.9~700.0℃	–	℃-E
	J(IC)	-199.9~800.0℃	–	℃-J
	T(CC)	-199.9~400.0℃	–	℃-t
Volt	mV	-50.0~50.0mV	-9999~9999	Au
	Volt	-1.000~1.000V	-9999~9999	u
	Volt	-10.0~10.0V	-9999~9999	u
mA	mA	4.00~20.00mA	-9999~9999	AR
PT	Pt100 Ω	-199.9~600.0	–	a-Pt
	JPt100 Ω	-199.9~600.0	–	J-Pt

* mA type: External 250Ω(±0.01% 25ppm) resistance is attached.

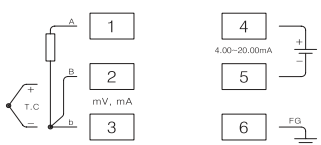
Ordering Code

Model	Indicator	Description	Etc
KIT-600	0	None	Vertical
	1	With LCD	Horizontal

* Temperature sensor is separate way subject of discussion

Terminal Diagram

ISOLATED 2-WIRE TRANSMITTER



* Change the bottem S/W when from T/C, mV and V to RTD, to T/C RTD
* mA input needs 20Ω 0.05% 25ppm resistance spiral on outside.

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