Powder Level Switch Powder & Liquid Level Switch Non-Contact Level Meter Flow Sensor Contact Level Meter Liquid Level Meter & Switch Conveyor Peripherals and more...

PRODUCT CATALOG

EDITION.1





CONTENTS

Powder Level Switch 2-3
Powder & Liquid Level Switch
Non-Contact Level Meter 5
Flow Sensor 5
Contact Level Meter
Liquid Level Meter & Switch
Conveyor Peripherals
Certified Explosion-proof Instruments: Usable Range Of Explosive Gas •••••••••••••••••••••••••••••••••••
Chemical Resistance Table ····· 11
Characteristic Table of Fluorocarbon Resin ······ 12
Table of Recommended Sensitivity and Specific Inductive Capacity for Capacitance Type Level Switch ······ 13-14





Powder Level Switch



The attenuation of microwave detects levels of powder, granules and blocks as well as pulverized materials. Heat-resistant type is available.

Powder Granules Lump

MWS2-24TN

MWS2-24RN

Powder & Liquid Level Switch



Non-Contact Level Meter

Laser Type Level Indicator

Best suitable for non-contact measurement at the places where it is highly difficult or dangerous to measure!



With long wavelength and very small beam divergence, laser level meter measures pinpoint, avoiding the obstacles.







Flow Sensor



Contact Level Meter

Sounding Type Level Indicator

Various product lines. They can be applied to all processes, and they are the best selling lines for their reliability.



CPU built-in models. Upgraded models are all weathertight constructions with aluminum casting body.



С

в

KSL-T8 SPAN : MAX40m Build-in CPU

Powder Granules L u m p Underwater Solid

KSL-MT SPAN : MAX20m Build-in CPU

Powder Granules Underwater Solid



A. Measuring Range B. Height of Nozzle C. Roll-up Position

Contact Level Meter



Vertical Float Type Level Indicator



Liquid Level Meter & Switch



Conveyor Peripherals



National Standard International Standard d 2 G4 Exd B T4 Ignition level : G1-G5 d : Withstand pressure Exp-proof g : Withstand pressure Exp-proof Surface Temp. Class: T1-T6 EXP-proof grade : 1-3 e : Safety-increased EXP-proof Surface industries: IIA, IIB, IIC e : Safety-increased EXP-proof EXP-proof construction i : Intrinsic Safety EXP-proof Flameproof enclosure type ia, ib : Intrinsic Safety EXP-proof Explosion-proof equipment (IEC) f: Pressurized construction p: Pressurized construction o : Oil filled EXP-proof o: Oil filled EXP-proof s: Special EXP-proof Ignition Temp. ver 300°C Over 100°C Over 200°C Over 135°C ver 80°C

of Expl Gas	osive	Over 450°C	Below 450°C	Below 300°C	Below 200°C	Below 135°C	Below 100°C	
Tempe Grade	rature	T1	T2	Т3	T4	Т5	T6	
gnitio	n Level	G1	G2	G3	G4	G5	G6	
Steam Category	Explosion Grade 1	Acetone Ammonia Carbon monoxide Ethane Acetic acid Ethyl acetate Acetonitrile Isopropyl chloride m-xylene Chlorobenzene Hydrogen cyanide Dichloroethylene Trimethyl benzene Toluene Propane Benzene Methanol Methanol Methane Acrylic nitrile Ethyl Methyl Ketone O-xylene P-xylene Methyl acetate Ethyl bromide Styrene Benzotrifluoride	Ehtanol Isoamyl acetate Pranolol Butane Acetic anhydride Methyl acrylate Ethyl acrylate Isooctane Isopentane Vinyl chloride Vinyl acetate Propyl acetate Cyclohexane Acetylacetone Isobutanol Epichlorohydrin Isopentyl acetate Butyl acetate Disopropyl ether Dioxane Dichloroetane Thiophene Furan Propanol Propylene	Gasoline Hexane Butyl chloride Octane Cyclohexane Dimethyl ether Tetrahydrofuran Decane Hexanol Heptane Pentanol Pentanol Methyl hexane	Acetaldehyde (Di)ethyl ether Dibutyl ether		Ethyl nitrite	
Steam Category	Explosion Grade လ	Coal gas Dichloroethylene	Ethylene Propylene oxide Ethylene oxide Butadiene	Isopropylene Hydrogen sulfide				
Steam Category	Explosion Grade တ	Water gas Hydorgen	Acetylene			Carbon bysulfide	Ethyl sulfate	

Chemicals		Material			Chemicals	Material							
	PVC	PA	PP	FEP	PFA	SUS		PVC	PA	PP	FEP	PFA	SUS
Acetone	×	×	×	А	А	А	Nitric acid (10%)	А	А	А	А	А	×
Aniline	×	В	В	А	А	А	Nitric acid (50%)	В	А	А	А	А	×
Amyl alcohol	в	В	В	А	А	-	Caustic silver	А	А	Α	А	А	В
Ammonia water (10%)	В	А	А	А	А	А	Sodium nitrate (10%)	А	А	А	А	А	А
Ammonia water (28%)	в	А	Α	А	А	А	Vegetable oil	В	А	Α	А	А	А
Isopropyl alcohol	в	В	В	А	А	А	Sugared water	А	А	А	А	А	А
Ethyl alcohol (50%)	в	А	В	А	А	А	Sugared water (alkali)	А	А	Α	А	А	В
Ethyl alcohol (95%)	В	В	В	А	А	А	Potassium hydroxide (45%)	А	А	А	А	А	В
Ethyl glycol	В	А	А	А	А	В	Potassium hydroxide (5%)	А	А	А	А	А	В
Zinc chloride	А	А	А	А	А	×	Sodium hydroxide (1%)	А	А	А	А	А	В
Aluminum chloride	А	А	Α	А	А	×	Sodium hydroxide (10%)	А	А	Α	А	А	В
Ammonium chloride	А	А	А	А	А	-	Sodium hydroxide (50%)	А	В	В	А	А	В
Kalium chloride	А	А	Α	А	А	×	Stearic acid	А	В	В	А	А	А
Calcium chloride	А	А	Α	А	А	в	Oil	В	×	×	А	А	А
Ferric chloride	А	А	Α	А	А	×	Ammonium carbonate	А	А	Α	А	А	А
Magnesium chloride	А	А	Α	А	А	в	Sodium carbonate	-	А	Α	А	А	А
Methylene chloride	×	×	×	А	А	В	Kerosene	А	×	×	А	А	А
Hydrochloric acid (10%)	А	А	Α	А	А	×	Toluene	×	×	×	А	А	А
Hydrochloric acid (35%)	А	А	А	А	А	×	Lactic acid	А	А	А	А	А	А
Perchloric acid	В	В	В	А	А	×	Picric acid	В	В	В	А	А	×
Hydrogen peroxide (10%)	А	А	А	А	А	В	Phenol (50%)	-	А	А	А	А	А
Hydrogen peroxide (3%)	А	А	А	А	А	А	n-butyl alcohol	А	А	А	А	А	-
Potassium permagnate	А	А	А	А	А	В	Hydrofluoric acid (10%)	А	А	А	А	А	×
Formic acid	А	А	А	А	А	×	Hydrofluoric acid (50%)	А	А	А	А	А	×
Xylene	×	×	×	А	А	А	Benzene	×	×	×	А	А	А
Citric acid	А	А	А	А	А	А	Boric acid	А	А	А	А	А	А
Cresol	А	×	×	А	А	А	Formaldehyde (gas)	В	А	А	А	А	В
Chromic acid (10%)	В	В	В	А	А	×	Methyl alcohol	В	А	А	А	А	А
Chromic acid (50%)		×	×	А	А	×	Methyl ethyl ketone	×	×	×	А	А	А
Chloroform	×	×	×	А	А	А	Sulfuric acid (10%)	А	А	Α	А	А	×
Acetic acid (50%)	А	А	А	А	А	А	Sulfuric acid (50%)	В	А	Α	А	А	×
Acetic acid (80%)	А	В	В	А	А	×	Sulfuric acid (98%)	В	А	А	А	А	×
Acetic ether	×	×	×	А	А	В	Ammonium sulfate	А	А	Α	А	А	В
Sodium hypochlorite	А	в	В	А	А	А	Phosphoric acid (10%)	А	А	А	А	А	В
Carbon tetrachloride	×	×	×	А	А	В	Phosphoric acid (50-80%)	В	А	Α	А	А	В
Dimethylformamode	×	А	А	А	А	А	Ammonium phosphate	А	А	А	А	А	В
Oxalic acid	А	А	А	А	А	×	Sodium phosphate	А	А	А	А	А	-

A = Good B = dependent on conditions x = Unusable

Characteristic Table of Fluorocarbon Resin

Abbreviation	PTFE (4F)	FEP (6F)	PFA	PVDF (2F)
Name	Polytetra Fluoro Etylene	Perfluoroethylene- Propylene Copolymer	Tetrafluoroethylene- Perfluoroalkoxy Vinyl Ether Copolymer	Polyvinylidene Fluoride
Continuous Temp. Limit (°C)	260	200	260	150
Pull Strength (Mpa)	13.7 – 34.3	16.6 – 21.6	27.5 – 29.4	24.5 - 50.0
Affected by weak acid	No	No	No	No
Affected by strong acid	No	No	No	Corroded by fuming sulfuric acid
Affected by weak alkali	No	No	No	No
Affected by strong alkali	No	No	No	No
Affected by organic solvent	No	No	No	Almost resistant
Affected by direct sunlight	No	No	No	No
Application-Features	fixtures, non-adhesiv	als for chemical-plant e applications, s and electric insulation	Machinery parts requiring anti-corrosion, intensity and transparency.	Anti-corrosion and electric insulating materials requiring flammability
Models applied	 Insulator for Capacitance model Insulator for Dust Monitor 	•Teflon-tube for Capacitance model (Standard: Max120°C)	•Teflon-tube for Capacitance model (Special :Max150°C) •Wire-tube for Capacitance model	•Transmitting device for Ultrasonic Transmitter

*The above characteristic table shows the features of fluorocarbon resin alone. When it is incorporated into a product, its heat resistant temperature and strength may be varied so that the performance level. may be maintained

Table of Recommended Sensitivity and Specific Indcutive Capacity for Capacitance Type Level Switch

	Name of Object	SIC	S		
Α	Acrylic Rubber	4	1		Co
-	Acetate Acetic acid	<u>3.2 ~ 7.0</u> 6.1 ~ 6.7	1	0.000	Co Co
-	Acetic anhydride	22	2		Cr
	Acetum,	38	2		Cr
	Acrylic Resin	2.7~4.5	1		Cr
	Alcohol	16 ~ 31	2		Cu
	Aluminum fluoride	2.2	1	00000	Су
-	Amber	2.8~2.9	1	D	De
-	Aminoalkyl Resin	3.9~4.2	1		DE
	Ammonia Amyl ether	<u>15 ~ 25</u> 3.1	2		Dia Dia
-	Aniline	6.9	1		Die
	Arboreous cotton	1.3 ~ 1.4	1		Die
	Asbestos	3.0 ~ 3.6	1		Die
	Asbestos	3.0 ~ 3.5	1		Do
	Asphalt	2.5 ~ 3.2	1	E	Ep
в	Bakelite	3.5~4.5	1		Eth
-	Balm grounds	3.1	1		Etł Etł
F	Barley bran Barley flour	3.0~4.0	1	-	Eth
F	Barley grain	3.0~4.0	1		Eth
	Barley hull	1.5	1		Eth
	Beeswax	2.5~2.9	1		Eth
	Benzene	2.3	1		Eth
	Benzine	2.3	1	_	Eth
	Benzyl alcohol	13	2	-	Eth
-	Bone dust	5.0~6.0	1	F	Eth
	Borosilicic acid glass Bran	4.5 ~ 6.2	1		Fe Fe
-	Butanol	16~17	2	-	Fe
	Butyl alcohol	11	2	-	Fe
	Butyl chloride	7.4	1	1	Fib
	Butylaldehyde	13	2] [Flo
	ButyInitryI	20	2		Flu
С	Calcite	8.3	1		Flu
	Calcium Calcium Carbonate	3	1	-	Flu
-	Calcium hydroxide	2.0 ~ 3.5 2.0 ~ 3.5	1	-	Fly Fo
	Calcium oxide	12	2	1 -	Fo
	Calcium phosphate	1.6 ~ 1.9	1	-	Fo
	Calcium sulfate	2.5 ~ 6.0	1		Fre
	Carbon bisulfide	2.6	1	G	Ga
	Carbon dioxide	1.6	1		Gl
-	Casein resin	6.0~7.0	1	-	Gl
-	Casting sand Cellophane	3.4~3.5 3.2~6.4	1		Gla
-	Cellulose	3.2~7.5	1	-	Gl
-	Cellulose acetate	3.2~7.0	1		Gr
	Cement powder	5.0 ~ 10	1		Gr
	Ceramic	4.0 ~ 7.0	1		Gr
	Cereal	3.0 ~ 8.0	1		Gr
	Charcoal	1.2 ~ 1.8	1	-	Gr
-	CHCH3	12	2		Gu
-	Chloride of lime Chlorobenzene	<u>1.8 ~ 2.0</u> 5.5 ~ 6.3	1	н	He He
-	Chloroform	4.8	1		He
F	Chlorotoluene	4.0~4.5	1		He
	Chocolate	3.0 ~ 4.0	1		He
	Chrome	12	2		He
	Chromite	4.0 ~ 4.2	1		Hy
L	Clay	1.8~2.8	1		Hy
-	Coal	4	1		Ink
F	Cocoa grounds Coffee grounds	2.5 ~ 3.5 2.4 ~ 2.6	1		loc
F	Compound	3.6	1		Isc
F	Copper oxide	18	2		Ivo
				-	

	Name of Object	SIC	S
	Corn	5.0 ~ 10	1
	Corn husk	2.3~2.6	1
	Cotton-seed oil	3.1	1
-	Cresol Crude oil	9.0 ~ 11	2
-	Crystal	2.48 3.5 ~ 4.7	1
-	Curry powder	2.6	1
	Cyclohexane	19	2
	Decanol	8.1	1
-	DEP dimethy	4.5 ~ 5.6	1
	Diallyl phthalein resin	3.3 ~ 6.0	1
	Diamond	2.2	1
	Dichloroethylene	4.6	1
	Diesel oil	1.8	1
	Diethyl ether	4.3	1
	Dolomite	8	1
	Epoxy resin	2.5 ~ 6.0	1
	Ethanol	24	2
	Ethyl acetate	6.0 ~ 6.4	1
	Ethyl ether	3.9 ~ 4.3	1
	Ethyl iodide	7.8	1
	Ethyl toluene	2.2	1
	Ethylene dichloride	11 ~ 17	2
	Ethylene glycol	37	2
	Ethylene iodide	3.4	1
	Ethylene oxide	4.0 ~ 5.0	1
	Ethylene resin	2.2~2.3	1
	Ethylene terafluoride	1.9 ~ 2.0	1
	Feeding stuff	38	2
	Feldspar porcelain	5.0~7.0	1
	Ferric oxide	14	2
	Ferromanganese	5.0~5.2	1
	Fiber	2.5~7.5	1
	Flour	2.5~3.0	1
	Fluid margarine Fluorine rubber	2.8~3.2	1
	Fluorite	6.8 ~ 8.0 6.8	1
	Fly ash	1.5 ~ 1.7	1
	Formaline	23	2
	Formamido	109	2
	Formic acid	58	2
	Freon	2.2	1
	Gasoline	2.0 ~ 2.2	1
	Glass	3.7	1
	Glass (granulated	6.0 ~ 7.0	1
	Glass-silicon board	3.5 ~ 4.2	1
	Glycerin	47~68	2
	Glycol	35~40	2
	Granulated gelatine	2.6~2.7	1
	Granulated sugar	1.5 ~ 2.2	1
	Graphite	12~15	2
	Gravel	5.4 ~ 5.6	1
	Grout	3.0 ~ 5.0	1
_	Gum	2.7~2.9	1
	Heavy oil	3	1
	Helium	1.1	1
	Heptanal	13	2
	Heptane	1.9 ~ 2.0	1
	Hexane	5.8~6.3	1
	Hexanol	13	2
	Hydrochloric acid 100%	4.0-12	1
_	Hydrofluoric acid	11 ~ 17	2
	Ink	2.5	1
	lodine	11	2
	Isobutyl alcohol Isobutyl amine	18 ~ 40 4.5	2

SIC - Specific Inductive Capacity S - Sensitivity
*Please be advised that recommended SENSITIVITY depends on the conditions of the object to be measured, environments/temperature, and the shape of the electrode or its mounted conditions.

Table of Recommended Sensitivity andSpecific Indcutive Capacity for Capacitance Type Level Switch

2	Name of Object	SIC	S
ĸ	Kerosene	1.8	1
L	Lactonitrile	38	2
2	Lead carbonate	18	2
2	Lead glass	7.0 ~ 10	1
	Lead nitrate	38	2
8	Linoleic acid	2.6 ~ 2.7	1
8	Lumber, dried	2.0 ~ 6.0	1
	Lumber, wet	11 ~ 30	2
N	Magnesium oxide	9.6	1
	Magnesium sulfate	8.2	1
	Manganese dioxide	5.0 ~ 5.2	1
	Marble	3.5 ~ 9.3	1
	Melamine resin	4.7 ~ 11	1
	Menthol	3.9	1
	Metane	1.7	1
	Methacrylic resin		1
		2.2~3.2	
	Methanol	33	2
	Methyl aniline	5.9	1
	Methyl ether	5	1
	Methyl iodide	7	1
	Methyl nitrate	24	2
	Methylamine	9.4	1
	Mica	5.0 ~ 9.0	1
	Mica	2.6 ~ 3.2	1
	Micanite	1.8 ~ 2.6	1
	Mineral oil	2.0 ~ 2.5	1
	Molasses	50~80	2
	Morpholine	7.3	1
	Na2CO3	8.7	1
	Naphthalene	2.5	1
	Natural rubber	2.7~4.0	1
-	Neoprene	6.0 ~ 9.0	1
	Nitrobenzene	36	2
-			1
	Nitrocellulose	6.2~7.5	
	Nylon	4.0 ~ 5.0	1
) 	Oil	2.0~2.2	1
2	Paint or the like	5.0~8.0	1
2_	Palmitic acid	70	2
2	Paper	2.0 ~ 2.5	1
2	Paraffin	1.6 ~ 1.9	1
	Paraffin	2.4 ~ 6.5	1
2	Paste	1.7 ~ 1.8	1
	Pentanol	14	2
2	Pentanone	15	2
2	Petrolatum	2.2~2.9	1
	Phenol	9.8	1
2	Phosphor	4	1
	Phthalic acid	5.0 ~ 6.3	1
	Picoline	9.8	1
8	Pine oil	2.5 ~ 2.6	1
-	Pine resin	1.5 ~ 1.8	1
2	Piperidine	5.8	1
2	· · · · ·		1
2	Plywood Palv ether ebleride	2.0~2.6	
-	Poly-ether chloride	2.9	1
-	Polyacetal	2.6~3.7	1
8	Polyamide	2.5~2.6	1
2	Polybutylene	2.2~2.3	1
2	Polycarbonate	2.9 ~ 3.0	1
	Polyester resin	2.8~8.1	1
3_	Polyethylene	2.2~2.4	1
2	Polyethylene, pellet	1.5	1
8	Polypropylene	1.5 ~ 1.8	1
	Polystyrol	2.0 ~ 2.6	1
	Polyvinyl acetate resin	2.7~6.1	1
	Polyvinyl alcohol	1.9 ~ 2.0	1
	Polyvinylidene chloride	4.5 ~ 6.0	1

Name of O	-	SIC	S
Powdered coal		2.0~4.0	1
Propane		1.6	1
Propionaldehyd	de	19	2
Propyl alcohol Propyl butyrate		32	2
	;	4.3	1
Pyrex Quartz sand		2.5 ~ 3.5	1
Resin			1
Rice		1.8 ~ 2.6 3.0 ~ 8.0	1
Rice flour		3.5 ~ 3.7	
Ricinus			1
		4.4~4.8	1
Rosin		2.6~3.5	1
Rubber Salt		2.1~2.7	1
Sand		5.9	
		3.0 ~ 5.0	1
Seasoned lumb	ber	2.0 ~ 6.0	1
Sesame Silicon dioxide		1.8~2.0	1
		4.5	1
Silicone		2.1 ~ 2.4	1
Silicone resin		3.5 ~ 5.0	1
Silk		1.3 ~ 2.0	1
Sinter		12	2
Soda ash		2.7	1
Soda-lime glas		5.5~8.5	1
Sodium carbon		2.7	1
Sodium cyanid	e	7.6	1
Sodium nitrate		5.2	1
Soluble quartz		3.5 ~ 4.5	1
Soy bean		1.8 ~ 2.0	1
Soy bean waste	е	2.7~2.8	1
Styrene		2.3~3.4	1
Styrol resin		2.1 ~ 2.8	1
Sugar		3	1
Sulfur		3.6 ~ 4.4	1
Tar		2.0 ~ 3.0	1
Teflon		2	1
Tetrachloroethy		2.3	1
Tetrafluoroethy	lene	2.1	1
Thinner		3.7	1
Thiokol		7.5	1
Tobacco		1.5 ~ 1.8	1
Toluene		2.0 ~ 2.4	1
Transformer oil		2.2~2.4	1
Trichloroethyle		3.4	1
Trichlorotoluen	e	6.9	1
Trifluoroacetic	acid	40	2
Trinitriles		19	2
Urea		5.0~8.0	1
Urea resin		3.4	1
Urethane		6.5 ~ 7.1	1
Urethane (hard	ener)	6.3	1
Urethane rubbe	er	6.7~7.5	1
Vanadium sulfi	de	3.1	1
Vinyl alcohol		1.8 ~ 2.0	1
Vinyl alcohol re	esin	2.6 ~ 3.5	1
Vinyl chloride p	owder	1.4	1
Vinyl chloride r		2.8~6.4	1
Water		80	2
Water-soluble of	chemicals	50~80	2
Wheat		3.0 ~ 5.0	1
White mica		4.5 ~ 9.6	1
Xylene		2.2~2.6	1
Zinc oxide		1.7~2.5	1

Line of business

Rotary Paddle Type Level Switch Vibration Type Level Switch Swing Type Level Switch Acoustic Level Switch Capacitance Type Level Switch Capacitive Proximity Sensor Capacitance Type Level Indicator Diaphragm Type Level Switch Tilt Switch Leak Type Level Switch Microwave Switch Sounding Bob Type Level Indicator Flow Switch Electrode Type Level Switch Float Switch Float Type Level Indicator Ultrasonic Type Level Indicator Equipments For Conveyor Lines Dust Monitor System Zirconia Oxygen Analyzer Laser Type Level Indicator RADAR Type Level Indicator Ultrasonic Flow meter



All-round Manufacturer of Level Controllers for Powder, Granules and Liquid

KANSAI Automation Co., Ltd.

Headquarters: TEL. 81-6-6312-2071 FAX. 81-6-6314-0848 URL http://www.kansai-automation.co.jp e-mail: infoe@kansai-automation.co.jp





SCIGATE AUTOMATION (S) PTE LTD No.1 Bukit Batok Street 22 #01-01 Singapore 659592 Tel: (65) 6561 0488 Fax: (65) 6562 0588 Email: sales@scigate.com.sg

Web: www.scigate.com.sg

Business Hours: Monday - Friday 8.30am - 6.15pm

Headquarters: 2-14, Togano-cho, Kita-ku, Osaka530-0056, Japan

Tokyo Branch: 1-29-6, Hamamatsu-cho, Minato-ku. Tokyo105-0013, Japan Tel 81-3-5777-6931 Fax 81-3-5777-6933 Nagoya Office: 3-10-17, Uchiyama, Chigusa-ku, Nagoya464-0075, Japan Tel 81-52-741-2432 Fax 81-52-741-1588 Kyushu Office: 1-1-21, Komemachi, Kokura Kita-ku, Kitakyushu802-0001, Japan Tel 81-93-511-4741 Fax 81-93-511-4580

Tel 81-6-6312-2071 Fax 81-6-6314-0848

*Please be sure to read USER'S GUIDE, Installation & Operation Instructions when using the instrument. *The specifications herein may be subject to change without advance notice.