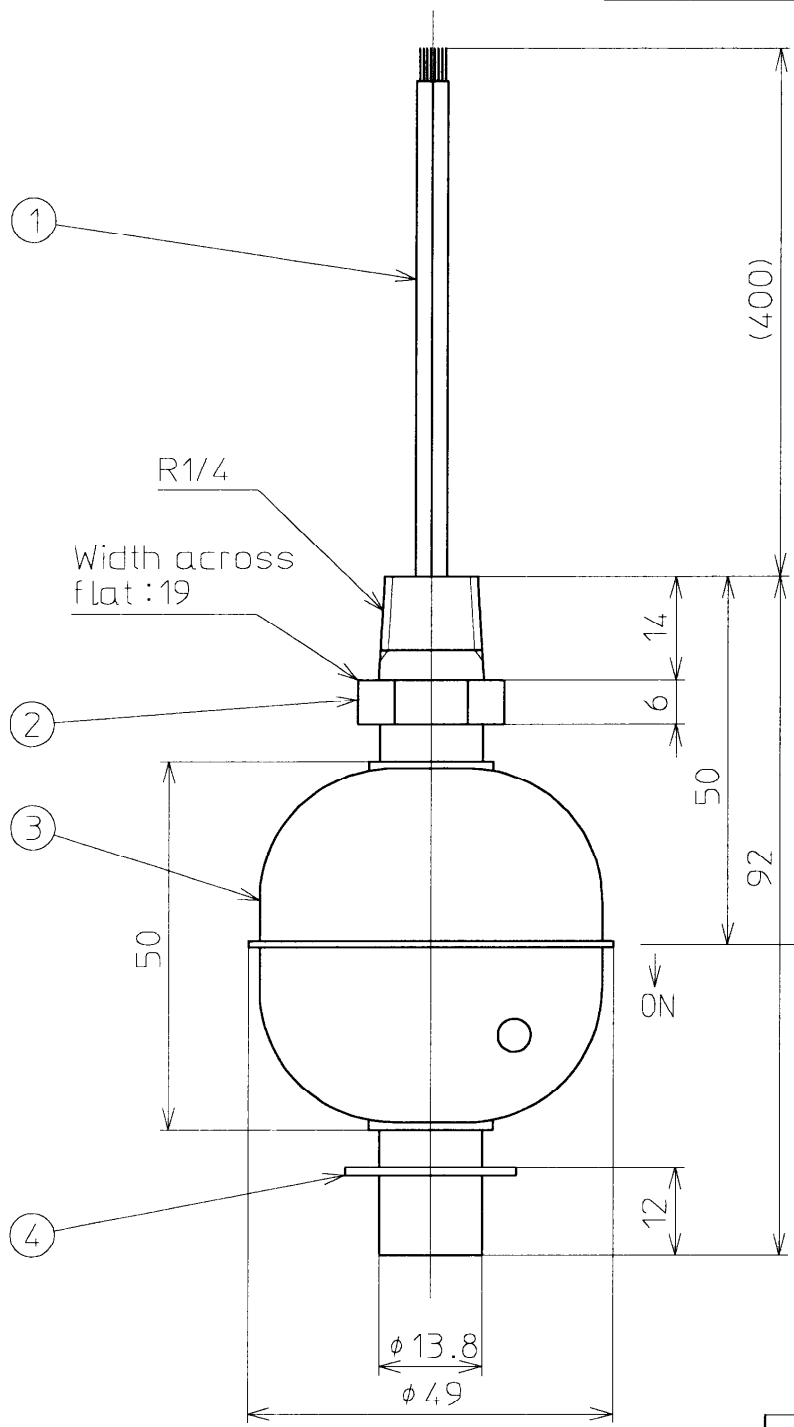


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REV	DATE	DESCRIPTION	BY	APP. BY
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DRAWING NO. SA 901099



1. Contact rating
(Maximum resistive load)
(1) Contact capacity : 15 VA AC 15 W DC
(2) Working current : 1 A AC 1 A DC
(3) Working voltage : 264V AC 200 V DC
2. Mechanical characteristics
(1) Maximum pressure : 2 MPa Max.
(2) Ambient temperature : -10 ~ 120 °C

Note
Switch operation, rising ON is easily changed by inverting float on stem.

Actuation level
= (In case of Specific gravity=1.0)

4	Float-travel stop	1	304 Stainless steel (SUS304)
3	Float	1	316 Stainless steel (SUS316)
2	Plug-stem	1	304 Stainless steel (SUS304)
1	Lead wire	1	Silicone rubber
P.No	Name	Qty.	Material

Sectional area of lead-wire : 0.3mm²

SCALE 1:1
UNITS MILLIMETERS
CH. BY [Signature]
APP. BY [Signature]
NOHKEN INC.
OSAKA, JAPAN

TITLE
MAGNETIC FLOAT SENSOR
MODEL FH30
DRAWING NO SA 901099

S P E C I F I C A T I O N S

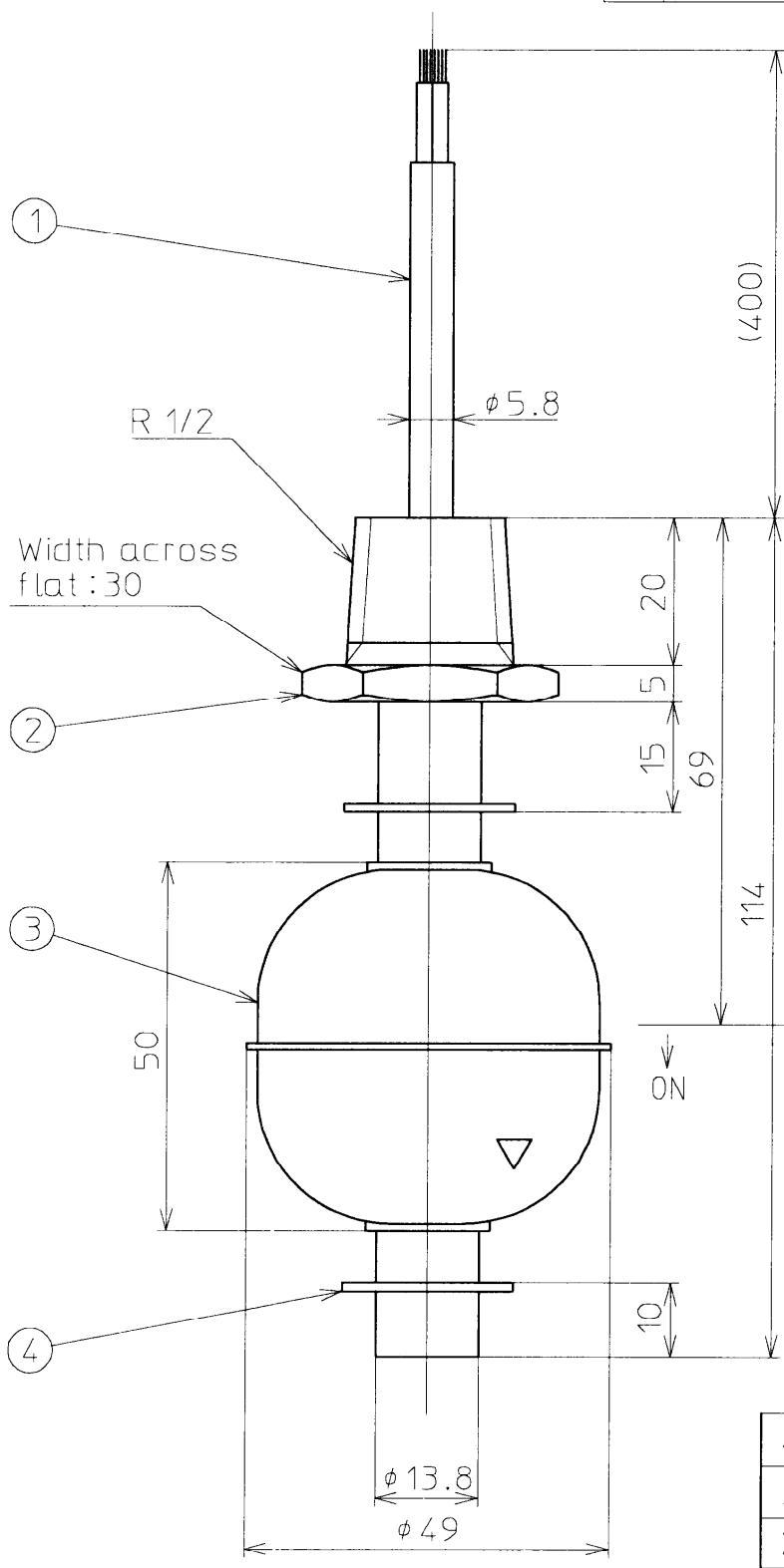
1. NAME : MAGNETIC FLOAT SENSOR
2. MODEL : FH 3 0
3. MEASURING OBJECT : Clean Liquid
4. OPERATION CHARACTERISTICS
 - 4.1 Actuation level : 50 mm, Falling ON (From top of mounting plug.)
Note: Switch operation, rising ON is easily changed by inverting float on stem.
 - 4.2 Float submersion depth : 25 mm
in water (Sp.Gr.=1.0)
 - 4.3 Specific Gravity : Min. 0.55
 - 4.4 Hysterisis of Switch : 3±2 mm
 - 4.5 Clearance between Float and stem : 1.6 mm
5. ELECTRICAL CHARACTERISTICS
 - 5.1 Contact Rating (Maximum resistive load)
 - 5.1.1 Max. Contact Capacity : 15 VA 15 W
 - 5.1.2 Max. Working Current : 1 A AC 1 A DC
 - 5.1.3 Max. Working Voltage : 264 V AC 200 V DC
 - 5.1.4 Life Expectancy : Min. 1×10⁶
6. MECHANICAL CHARACTERISTICS
 - 6.1 Withstand Pressure : 2 MPa Max.
 - 6.2 Allowable Impact : 100 m/s²
7. ENVIRONMENT
 - 7.1 Working Temperature : -10 to 120 °C
8. Others
 - 8.1 Wetted part material : 304 stainless steel (Float:316 SS)
 - 8.2 Mounting : R 1/4 plug
 - 8.3 Float dimension : φ49×H50
 - 8.4 Sectional area of lead wire : 0.3 mm² (Jacket of lead wire:Silicone Rubber)
 - 8.5 Mass : Approx. 140g

W A R R A N T Y

NOHKEN INC. products are warranted for a period of one(1) year from date of original factory shipment.

REVISIONS				
REV	DATE	DESCRIPTION	BY	APP. BY
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DRAWING NO. SA 901100 △



1. Contact rating
(Maximum resistive load)
 (1) Contact capacity : 110 VA AC 33 W DC
 (2) Working current : 0.5 A AC 0.3 A DC
 (3) Working voltage : 220V AC 110 V DC
2. Mechanical characteristics
 (1) Maximum pressure : 2 MPa Max.
 (2) Ambient temperature : -10-200 °C

Note
Switch operation, rising ON is easily changed by inverting float on stem.

Actuation level
 (In case of Specific gravity=1.0)

Sectional area of lead-wire : 0.5mm²

4	Float-travel stop	1	304 Stainless steel (SUS304)
3	Float	1	316 Stainless steel (SUS316)
2	Plug-stem	1	304 Stainless steel (SUS304)
1	Lead wire	1	Silicone
P.No	Name	Qty.	Material

DATE 07-29-'99	DR. BY <i>S. Iwano</i>
SCALE 1:1	CH. BY <i>F. Kuroki</i>
UNITS MILLIMETERS	APP. BY <i>K. Miyasaka</i>
NOHKEN INC. OSAKA, JAPAN	

TITLE	OUTLINE DRAWING FOR MAGNETIC FLOAT SENSOR	
MODEL	FH50	
DRAWING NO.	SA 901100 △	



S P E C I F I C A T I O N S

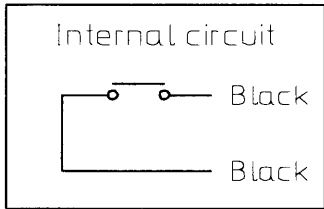
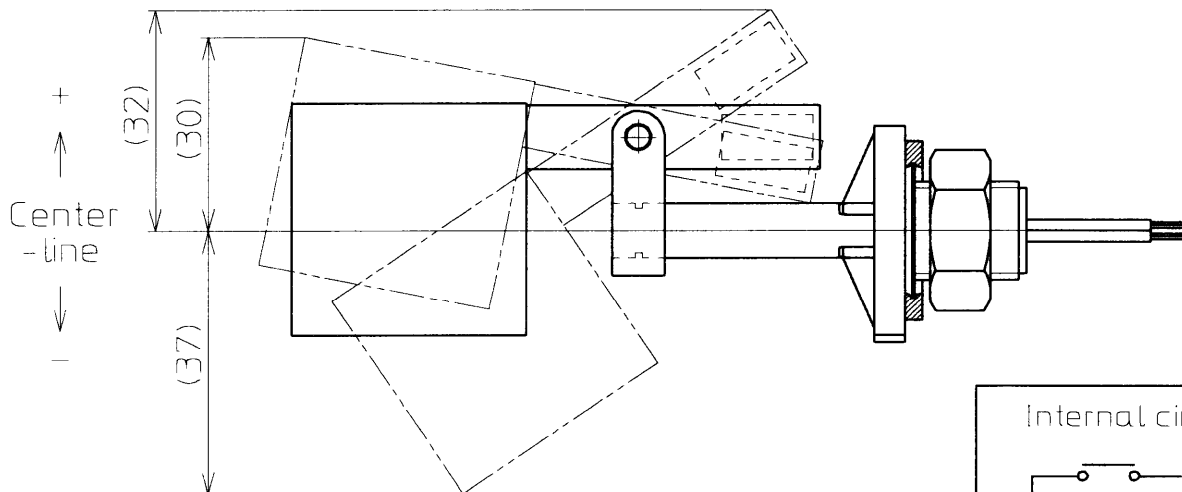
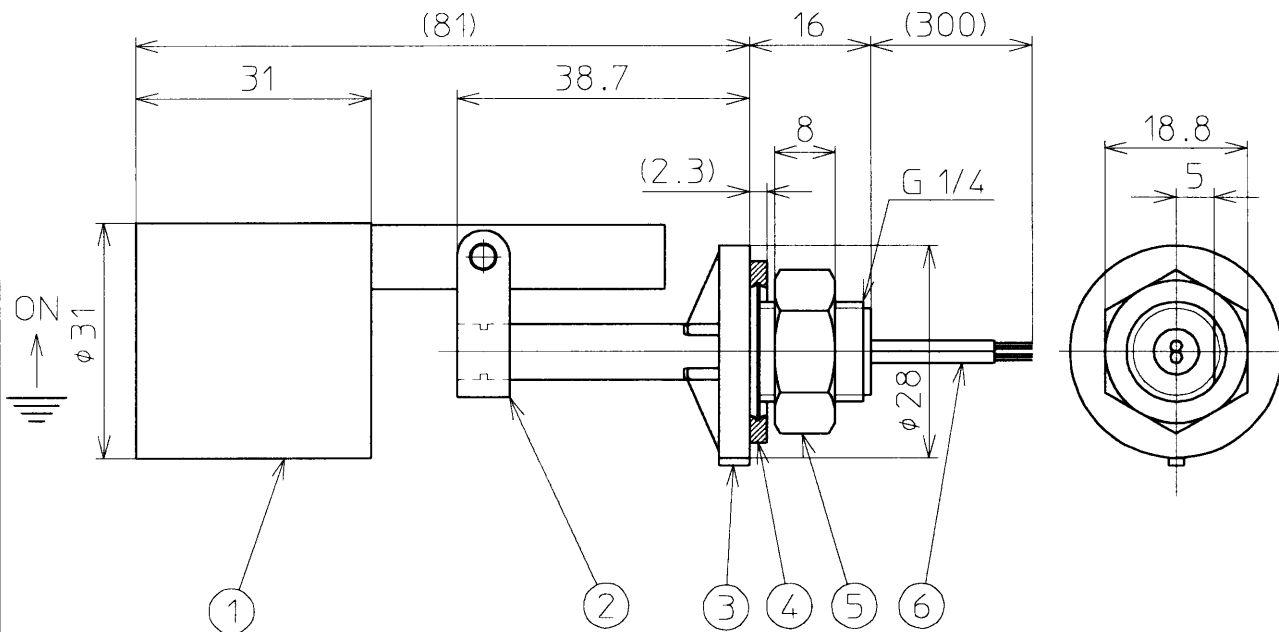
1. NAME : MAGNETIC FLOAT SENSOR
2. MODEL : F H 5 0
3. MEASURING OBJECT : Clean Liquid
4. OPERATION CHARACTERISTICS
 - 4.1 Actuation level : 69 mm, Falling ON(From top of mounting plug.)
Note: Switch operation, rising ON is easily changed by inverting float on stem.
 - 4.2 Float submersion depth : 28 mm
in water (Sp.Gr.=1.0)
 - 4.3 Specific Gravity : Min. 0.7
 - 4.4 Hysteresis of Switch : 3±2 mm
 - 4.5 Clearance between Float and stem : 1.6 mm
5. ELECTRICAL CHARACTERISTICS
 - 5.1 Contact Rating (Maximum inductive load)
 - 5.1.1 Max. Contact Capacity : 110 VA 33 W
 - 5.1.2 Max. Working Current : 0.5 A AC 0.3 A DC
 - 5.1.3 Max. Working Voltage : 220 V AC 110 V DC
 - 5.1.4 Life Expectancy : Min. 1×10⁶
6. MECHANICAL CHARACTERISTICS
 - 6.1 Withstand Pressure : 2 MPa Max.
 - 6.2 Allowable Impact : 100 m/s²
7. ENVIRONMENT
 - 7.1 Working Temperature : -10 to 200 °C
8. Others
 - 8.1 Wetted part material : 304 stainless steel (Float:316 SS)
 - 8.2 Mounting : R 1/2 plug
 - 8.3 Float dimension : φ49×H50
 - 8.4 Sectional area of cable wire : 0.5 mm² (Jacket of cable wire:Silicone Rubber)
 - 8.5 Mass : Approx. 180g

W A R R A N T Y

NOHKEN INC. products are warranted for a period of one(1) year from date of original factory shipment.

REVISIONS				
REV	DATE	DESCRIPTION	BY	APP. BY
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DRAWING NO. SA 901161 △



Specification

1. Working temperature : -10 to +90 °C
2. Withstand pressure : Max. 100 kPa
3. Specific gravity : Min. 0.5
4. Tensile strength for lead wire : Max. 20 N
5. Switch actuation level in water
 Contact closes : -8 ± 5 mm (specific gravity 1.0)
 (Distance from sensor center-line)
 (In case of rising level)
6. Hysteresis of switch : 5 ± 4 mm
7. Contact rating (With resistive load)
 Max. contact capacity : 50VA AC 50W DC
 Max. working current : 0.5A AC 0.5A DC
 Max. working voltage : 300V AC 300V DC

6	Lead wire	1	XLPVC (UL1430 AWG22)
5	Fitting nut	1	Polypropylene (PP)
4	Gasket	1	EPDM
3	Stem	1	Polypropylene (PP)
2	Float	1	Polypropylene (PP)
1	Float guide	1	Polypropylene (PP)
P.No	Name	Qty.	Material

DATE 07-29-'99	DR. BY <i>K. Igarashi</i>
SCALE N.T.S.	CH. BY <i>T. Matsuda</i>
UNITS MILLIMETERS	APP. BY <i>T. Miyajima</i>

TITLE	OUTLINE DRAWING OF MINIATURE FLOAT SENSOR	
MODEL	OLH-10	
DRAWING NO.	SA 901161 △	



NOHKEN INC.
OSAKA, JAPAN

S P E C I F I C A T I O N S

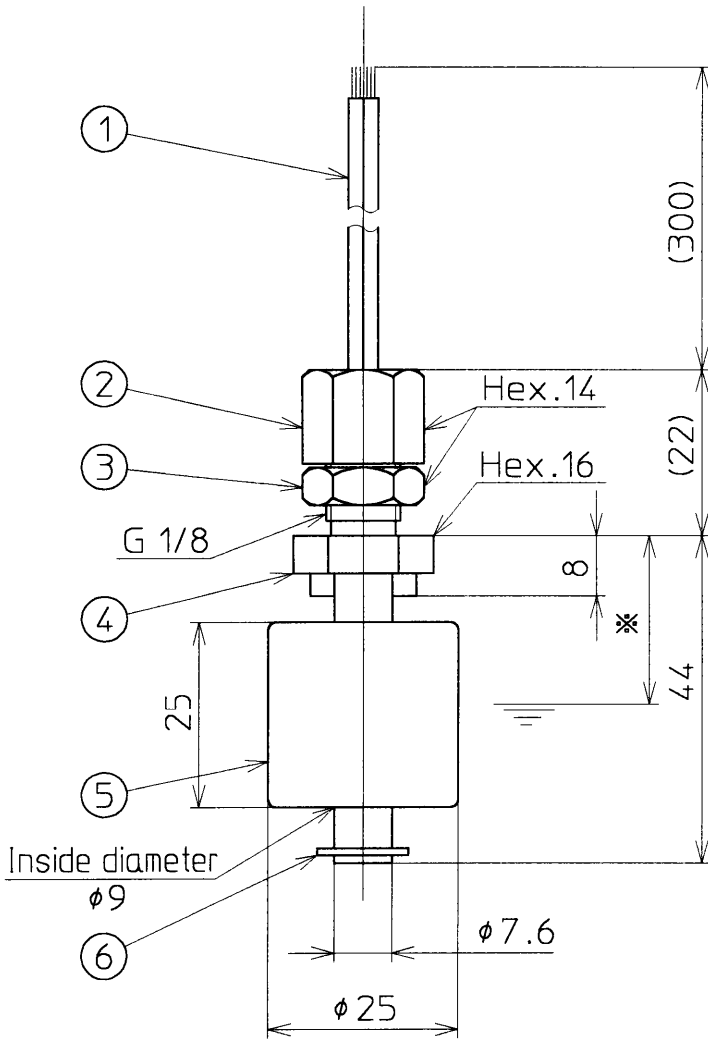
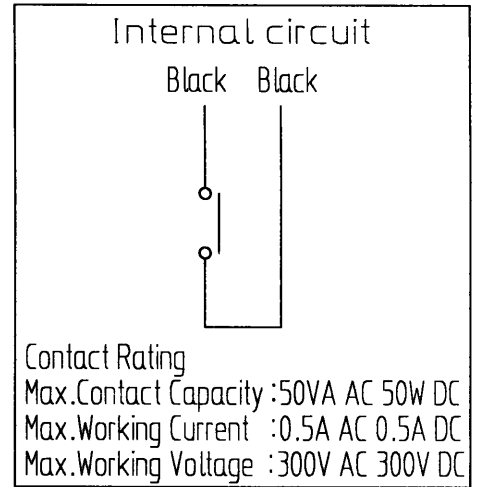
1. NAME : MINIATURE FLOAT SENSOR
2. MODEL : O L H - 1 0
3. MEASURING OBJECT : Clean liquid
4. OPERATION CHARACTERISTICS
 - (1) Relation of switch and : The switch is ON with -8 ± 5 mm rise from center of mount hole in liquid level.
(1.0 Specific gravity of the liquid)
 - (2) Minimum specific gravity of liquid as measurement : 0.5 or more
 - (3) Hysteresis of switch : 5 ± 4 mm
5. ELECTRICAL CHARACTERISTICS
 - (1) Max. contact capacity : 50 VA , 50 W
 - (2) Max. working current : 0.5 A AC, 0.5 A DC
 - (3) Max. working voltage : 300 V AC, 300 V DC
 - (4) Initial contact resistance : 0.1 Ω Min. (Exclude lead wire)
 - (5) Life : 1×10^7 Operations Min.
(12 V, 5mA DC Resistance load)
6. MECHANICAL CHARACTERISTICS
 - (1) Pressure : 100 kPa Max.
 - (2) Tensile strength : 20 N Max.
(Between housing and lead wire)
 - (3) Shock resistance : 100 m/s² Max.
7. ENVIRONMENT
 - (1) Working temperature : -10 to 90 $^{\circ}$ C
 - (2) Working humidity : 85% RH Max.
8. PHYSICAL
 - (1) Mass : Approx. 22 g (Lead wire length : 300mm)
 - (2) Mounting : G 1/4
 - (3) Lead wire : XLPVC
UL1430 AWG22 (Color : Black)
 - (4) Float dimension : $\phi 31\times L81$ mm
 - (5) Wetted parts material : Housing ; PP
Float ; PP
Gasket ; EPDM (Ethylene propylene rubber)

W A R R A N T Y

NOHKEN INC. products are warranted for a period of 1(one) year from date of original factory shipment, provided that handling, operation and maintenance of products shall be subjected to "NOHKEN's INSTRUCTION MANUAL".

REVISIONS				
REV	DATE	DESCRIPTION	BY	APP.BY
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DRAWING NO. CA 123047



Note *
 · Actuation Level (SG=1.0)

↑ ON	22.5mm ±2
↓ ON	24.5mm ±2

· Standard setting is ↓ ON
 · The operation of the switch, ↓ ON or ↑ ON, is easily changed by removing a float travel stop and inverting the float.

Lead wire :UL1430 AWG22

6	Float travel stop	1	316 Stainless steel
5	Float	1	Foamed NBR+ Phenolic
4	Housing	1	Polyacetal
3	Fitting nut	1	Polyacetal
2	Union nut	1	Polyacetal
1	Lead wire	2	XLPVC
P.No.	Name	Qty.	Material

DATE	05-15- '96	DR.BY	<i>[Signature]</i>	TITLE	OUTLINE DRAWING OF MINIATURE FLOAT SENSOR		
SCALE	N.T.S.	CH.BY	<i>[Signature]</i>	MODEL	OLV-2A		
UNITS	MILLIMETERS	APP.BY	<i>[Signature]</i>	DRAWING NO.	CA 123047		
		NOHKEN INC. OSAKA, JAPAN					

S P E C I F I C A T I O N S

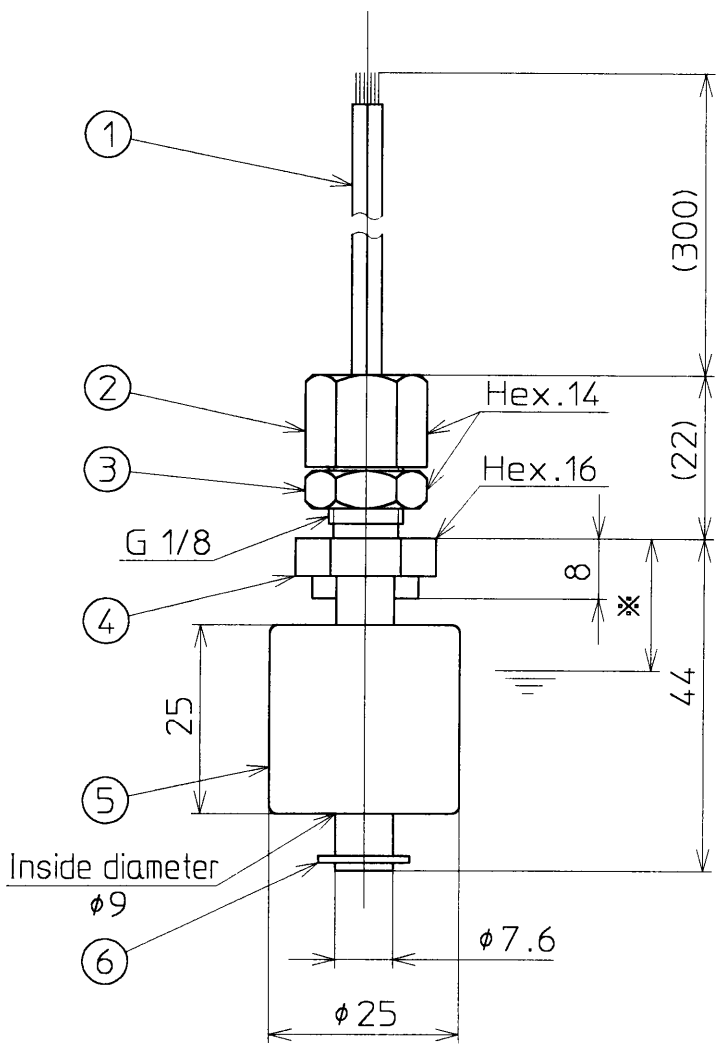
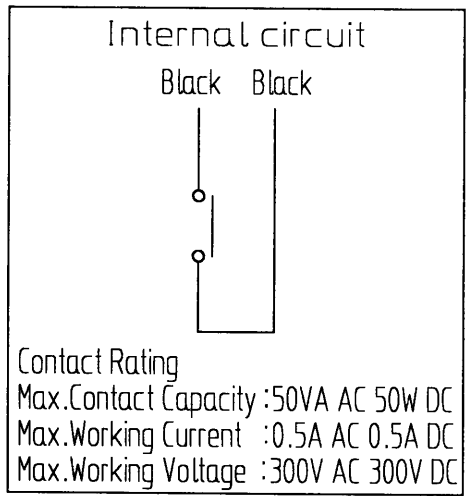
1. NAME : MINIATURE FLOAT SENSOR
2. MODEL : OLV-2A
3. MEASURING OBJECT : Clean liquid
4. OPERATION CHARACTERISTICS
 - (1) Relation of switch and liquid level : Float length is 25mm. 11mm is on and 14mm is under the level.
(1.0 Specific gravity of the liquid)
 - (2) Minimum specific gravity of liquid as measurement : 0.6 or more
 - (3) Hysteresis of switch : 1.5 ± 1 mm
 - (4) Clearance between float and stem : 1.4 mm
5. ELECTRICAL CHARACTERISTICS
 - (1) Max. contact capacity : 50 VA , 50 W
 - (2) Max. working current : 0.5 A AC, 0.5 A DC
 - (3) Max. working voltage : 300 V AC, 300 V DC
 - (4) Initial contact resistance : 0.1 Ω Min. (Exclude lead wire)
 - (5) Life : 1×10^7 Operations Min.
(12 V, 5mA DC Resistance load)
6. MECHANICAL CHARACTERISTICS
 - (1) Pressure : 1 MPa Max.
 - (2) Tensile strength : 20 N Max.
(Between housing and lead wire)
 - (3) Shock resistance : 100 m/s² Max.
7. ENVIRONMENT
 - (1) Working temperature : -10 to 90 °C
 - (2) Working humidity : 85% RH Max.
8. PHYSICAL
 - (1) Mass : Approx. 15 g (Lead wire length : 300mm)
 - (2) Mounting : G 1/8 [Outside diameter(Union connected part): $\phi 6$]
 - (3) Lead wire : XLPVC
UL1430 AWG22 (Color : Black)
 - (4) Float dimension : $\phi 25 \times H25$ mm
 - (5) Wetted parts material : Housing ; Polyacetal
Float ; Foamed NBR + Phenolic
Float travel stop ; 316 stainless steel

W A R R A N T Y

NOHKEN INC. products are warranted for a period of 1(one) year from date of original factory shipment, provided that handling, operation and maintenance of products shall be subjected to "NOHKEN's INSTRUCTION MANUAL".

REVISIONS				
REV	DATE	DESCRIPTION	BY	APP.BY
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DRAWING NO. CA 123051



Note ※
 · Actuation Level (SG=1.0)

↑ ON	17mm ±2
↓ ON	20mm ±2

· Standard setting is ↓ ON
 · The operation of the switch, ↓ ON or ↑ ON, is easily changed by removing a float travel stop and inverting the float.

Lead wire : UL1430 AWG22

6	Float travel stop	1	PP
5	Float	1	Foamed PP
4	Housing	1	PP
3	Fitting nut	1	PP
2	Union nut	1	PP
1	Lead wire	2	XL PVC
P.No.	Name	Qty.	Material

DATE	05-15-'96	DR.BY	<i>[Signature]</i>
SCALE	N.T.S.	CH.BY	<i>[Signature]</i>
UNITS	MILLIMETERS	APP.BY	<i>[Signature]</i>

NOHKEN INC.
 OSAKA, JAPAN

TITLE	OUTLINE DRAWING OF MINIATURE FLOAT SENSOR		
MODEL	OLV-2P		
DRAWING NO.	CA 123051		

S P E C I F I C A T I O N S

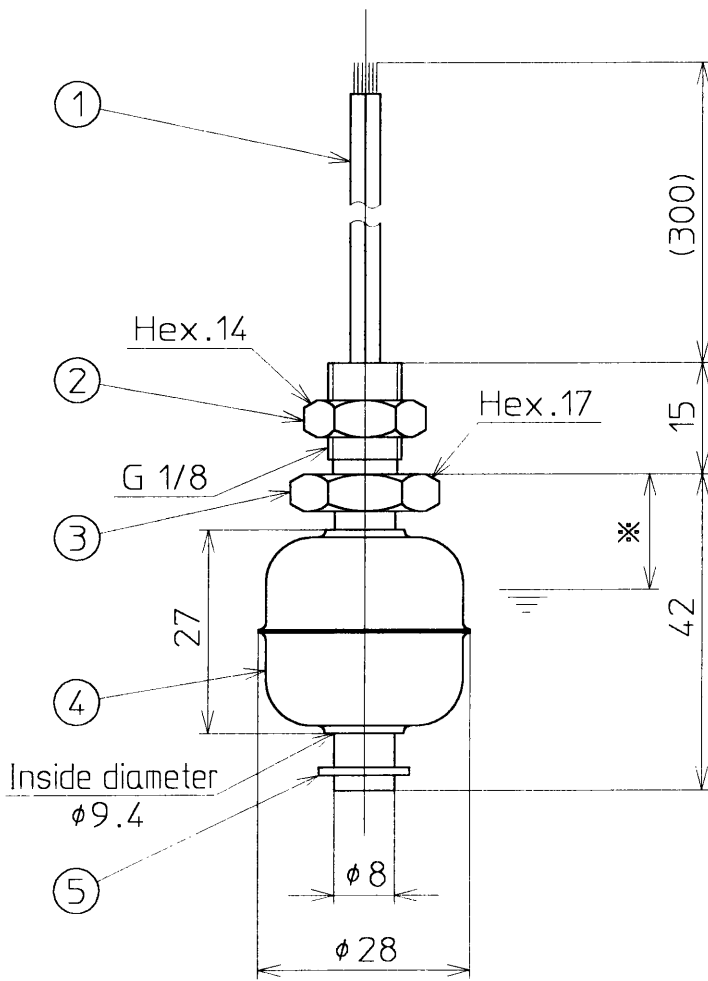
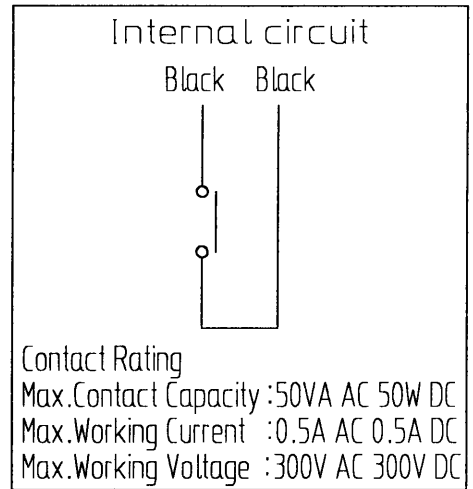
1. NAME : MINIATURE FLOAT SENSOR
2. MODEL : OLV-2P
3. MEASURING OBJECT : Clean liquid
4. OPERATION CHARACTERISTICS
 - (1) Relation of switch and liquid level : Float length is 25mm. 6mm is on and 19mm is under the level.
(1.0 Specific gravity of the liquid)
 - (2) Minimum specific gravity of liquid as measurement : 0.85 or more
 - (3) Hysteresis of switch : 1.5 ± 1 mm
 - (4) Clearance between float and stem : 1.4 mm
5. ELECTRICAL CHARACTERISTICS
 - (1) Max. contact capacity : 50 VA , 50 W
 - (2) Max. working current : 0.5 A AC, 0.5 A DC
 - (3) Max. working voltage : 300 V AC, 300 V DC
 - (4) Initial contact resistance : 0.1 Ω Min. (Exclude lead wire)
 - (5) Life : 1×10^7 Operations Min.
(12 V, 5mA DC Resistance load)
6. MECHANICAL CHARACTERISTICS
 - (1) Pressure : 1 MPa Max.
 - (2) Tensile strength : 20 N Max.
(Between housing and lead wire)
 - (3) Shock resistance : 100 m/s² Max.
7. ENVIRONMENT
 - (1) Working temperature : -10 to 90 °C
 - (2) Working humidity : 85% RH Max.
8. PHYSICAL
 - (1) Mass : Approx. 16 g (Lead wire length : 300mm)
 - (2) Mounting : G 1/8 [Outside diameter(Union connected part): $\phi 6$]
 - (3) Lead wire : XLPVC
UL1430 AWG22 (Color : Black)
 - (4) Float dimension : $\phi 25 \times H25$ mm
 - (5) Wetted parts material : Housing ; PP
Float ; Foamed PP
Float travel stop ; PP

W A R R A N T Y

NOHKEN INC. products are warranted for a period of 1(one) year from date of original factory shipment, provided that handling, operation and maintenance of products shall be subjected to "NOHKEN's INSTRUCTION MANUAL".

REVISIONS				
REV	DATE	DESCRIPTION	BY	APP. BY
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DRAWING NO. SA 900039 △



Note *
 · Actuation Level (SG=1.0)

↑ ON	16.5mm ±2
↓ ON	

- Standard setting is ↓ ON
- The operation of the switch, ↓ ON or ↑ ON, is easily changed by removing a float travel stop and inverting the float.

Lead wire : UL1430 AWG22

5	Float travel stop	1	316 Stainless steel
4	Float	1	316L Stainless steel
3	Housing	1	316 Stainless steel
2	Fitting nut	1	316 Stainless steel
1	Lead wire	2	XLPVC
P No.	Name	Qty.	Material

DATE	08-01-'97	DR. BY	<i>S. Nagashima</i>	TITLE	OUTLINE DRAWING OF MINIATURE FLOAT SENSOR		
SCALE	N.T.S.	CH. BY	<i>M. Yamamoto</i>				
UNITS	MILLIMETERS	APP. BY	<i>J. Kawai</i>				
				MODEL	OLV-5		
				DRAWING NO.	SA 900039 △		



NOHKEN INC.
 OSAKA, JAPAN

S P E C I F I C A T I O N S

1. NAME : MINIATURE FLOAT SENSOR
2. MODEL : OLV-5
3. MEASURING OBJECT : Clean liquid
4. OPERATION CHARACTERISTICS
 - (1) Relation of switch and liquid level : Float length is 27mm. 8mm is on and 19mm is under the level.
(1.0 Specific gravity of the liquid)
 - (2) Minimum specific gravity of liquid as measurement : 0.8 or more
 - (3) Hysteresis of switch : 1.5 ± 1 mm
 - (4) Clearance between float and stem : 1.4 mm
5. ELECTRICAL CHARACTERISTICS
 - (1) Max. contact capacity : 50 VA , 50 W
 - (2) Max. working current : 0.5 A AC, 0.5 A DC
 - (3) Max. working voltage : 300 V AC, 300 V DC
 - (4) Initial contact resistance : 0.1 Ω Min. (Exclude lead wire)
 - (5) Insulation resistance : 100 M Ω Min. Measured with a 500V DC Megger
(Between housing and lead wire)
 - (6) Withstand voltage : 1000 V AC 1 minute Min.
(Between housing and lead wire)
 - (7) Life : 1×10^7 Operations Min.
(12 V, 5mA DC Resistance load)
6. MECHANICAL CHARACTERISTICS
 - (1) Pressure : 2 MPa Max.
 - (2) Tensile strength : 20 N Max.
(Between housing and lead wire)
 - (3) Shock resistance : 100 m/s² Max.
7. ENVIRONMENT
 - (1) Working temperature : -10 to 100 $^{\circ}$ C
 - (2) Working humidity : 85% RH Max.
8. PHYSICAL
 - (1) Mass : Approx. 37 g (Lead wire length : 300mm)
 - (2) Mounting : G 1/8
 - (3) Lead wire : XLPVC
UL1430 AWG22 (Color : Black)
 - (4) Float dimension : $\phi 28 \times H27$ mm
 - (5) Wetted parts material : Housing ; 316 stainless steel
Float ; 316L stainless steel
Float travel stop ; 316 stainless steel

W A R R A N T Y

NOHKEN INC. products are warranted for a period of 1(one) year from date of original factory shipment, provided that handling, operation and maintenance of products shall be subjected to "NOHKEN's INSTRUCTION MANUAL".

20m

225

130

(18)

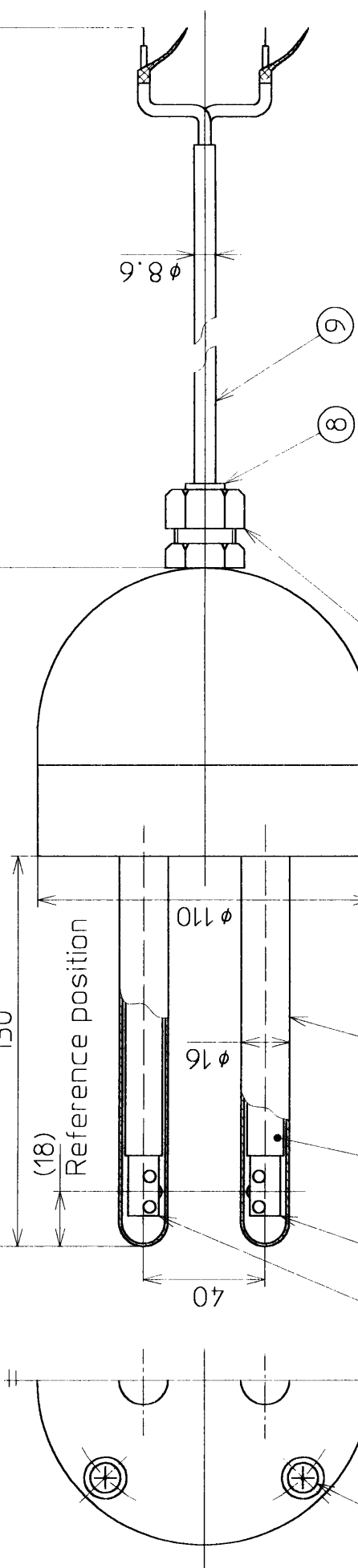
Reference position

40

$\phi 16$

$\phi 110$

$\phi 9.8$

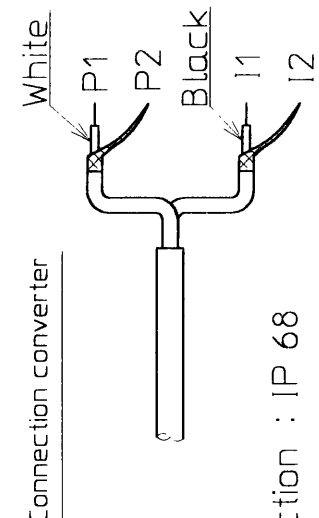


9	Cable	1	Polyvinylchloride (PVC)
8	Packing	1	Butyl rubber (IIR)
7	Connector	1	Polypropylene (PP)
6	Case	1	Polyvinylchloride (PVC)
5	Seal pipe	2	Fluoro-ethylene-propylene (FEP)
4	Element holder pipe	2	304 Stainless steel (SUS 304)
3	Photodetector	1	
2	Infrared emitting diode	1	
1	Bolt	4	304 Stainless steel (SUS 304)
P.No.	Name	Qty.	Material

TITLE
OUTLINE DRAWING OF
MODEL OX INTERFACE SENSOR

MODEL OX 30 SHEET NO.

DRAWING NO. SA 49044



To converter
(OX1000-0 or OX1000-1)

Construction : IP 68

DATE	08-02-'91	DR. BY	J. Yamada
SCALE	N.T.S.	CH. BY	K. Yoda
UNITS	MILLIMETERS	APP. BY	Y. Yamada

NOHKEN INC
OSAKA, JAPAN

REV	DATE	DESCRIPTION	BY	APP. BY

REVISIONS

S P E C I F I C A T I O N S

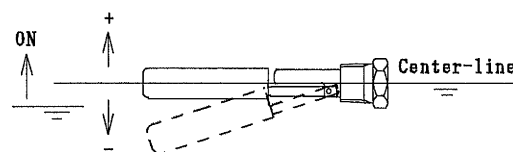
1. NAME : OPTICAL TYPE INTERFACE SENSOR
2. MODEL : O X 3 0 (Sensor)
3. MEASURING OBJECT : Deposition, Interface
4. OPERATION CHARACTERISTICS
 - 4.1 Separated Length : Maximum Distance Between Sensor And Converter: 20 m
(When using two core cable each core shield
NOHKEN's proper cable.)
5. MECHANICAL CHARACTERISTICS
 - 5.1 Allowable Pressure : 200 kPa
6. ENVIRONMENT
 - 6.1 Temperature of In Container: -10 to +50 ℃
7. CONSTRUCTION : Water-proof construction (IP 68)
8. PHYSICAL
 - 8.1 Material of In Container : Polyvinylchloride (PVC), Fluoro Ethylene Propylene (FEP)
Polypropylene (PP), Butyl Rubber (IIR)
304 Stainless steel (SUS 304)
 - 8.2 Mass of Sensor : Approx. 1 kg
of Cable : Approx. 80 g/m
 - 8.3 Cable Diameter size : ϕ 8.6 mm
 - 8.4 Installation : Hang Type

W A R R A N T Y

NOHKEN INC. products are warranted for a period of 1(one) year from date of original factory shipment, provided that handling, operation and maintenance of products shall be subjected to " NOHKEN's INSTRUCTION MANUAL ".

S P E C I F I C A T I O N S

1. NAME : SIDE-MOUNTED FLOAT SENSOR
 2. MODEL : SH10
 3. MEASURING OBJECT : Clean liquid



4. OPERATION CHARACTERISTICS

- 4.1 Switch Actuation Level in water (specific gravity= 1.0)
 Distance from sensor center-line.

Contact closes : -5^{+5}_{-10} mm ($-2^{\circ} \sim -10^{\circ}$ at pin of float)
 (at center line of SH type) (In case of rising level)

4.2 Specific Gravity : Min. 0.6

4.3 Life Expectancy : Min. 1×10^7 Operations (12 V, 5 mA DC)

5. ELECTRICAL CHARACTERISTICS

5.1 Contact Rating (With Resistive Load)

- 5.1.1 Max. Contact Capacity : 50 VA, 50 W
 5.1.2 Max. Working Current : 0.5 A AC, 0.5 A DC
 5.1.3 Max. Working Voltage : 300 V AC, 300 V DC

5.2 Withstand Voltage : 1500 V AC (1 minute or more.
 Between Lead wire and Plug.)

5.3 Insulation Resistance : 100 M Ω or more (Measured with 500 V DC megger.
 Between Lead wire and Plug.)

6. MECHANICAL CHARACTERISTICS

6.1 Withstand Pressure : 1M kPa Max.

6.2 Tensile strength for Lead wire: 20 N Max. (Between Lead wire and Plug.)

6.3 Allowable Impact : 100 m/s² Max.

7. WORKING TEMPERATURE : -10 to 120 °C

8. PHYSICAL

8.1 Material

- 8.1.1 Plug : Stainless steel (SCS14)
 8.1.2 Wetted Parts : Stainless steel (SCS14, SUS316L, SUS316-WPA)

8.2 Installation : Plug

8.3 Dimension

- 8.3.1 Plug : R 1/2
 8.3.2 Float : $\phi 17 \times L70$ mm
 8.3.3 Lead wire : XLPE (UL3266 AWG22)

8.4 Mass : Approx. 110 g

W A R R A N T Y

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