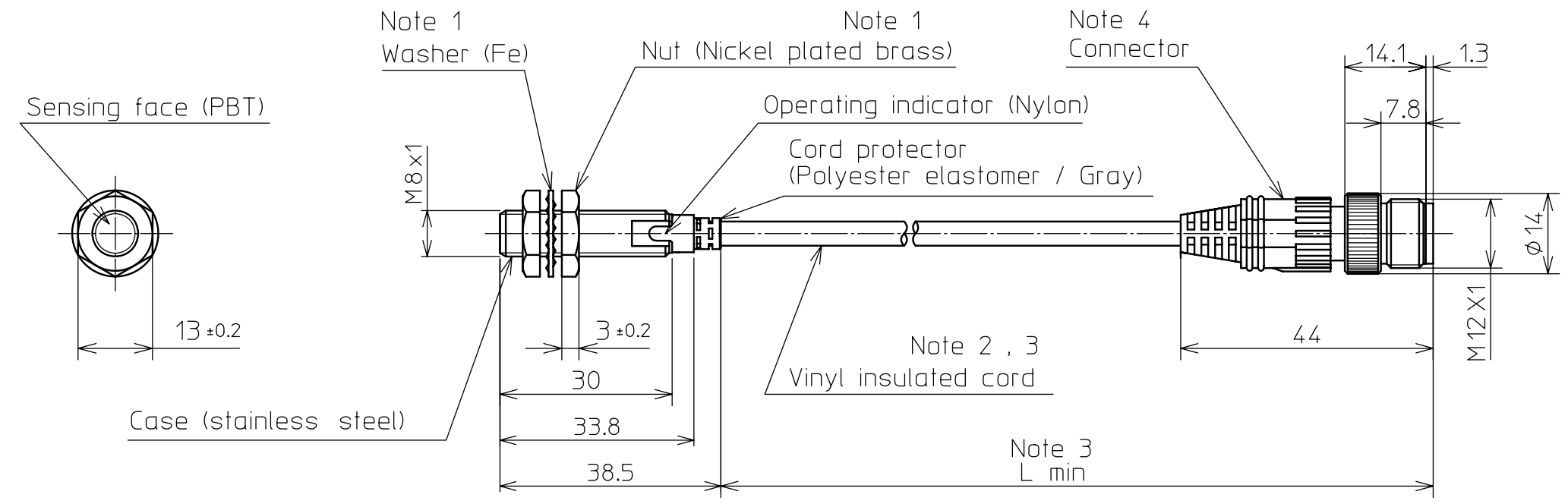


SP. No.

1. Mounting dimensions



- Note 1. A washer and nuts are attached.  
 Note 2. Cord : Oil resistance & vibration resistance. (dia. :  $\phi 4.1$ ,  $0.3\text{mm}^2$  )  
 Note 3. Cord length

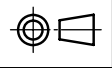
Catalog listing	L min
FL7M-2*6H(D)-CN03	300min
FL7M-2*6H(D)-CN05	500min
FL7M-2*6H(D)-CN1	1000min

4. Material of connector.  
 Housing : Polyester elastomer / light gray  
 Contact : Au plated brass  
 Rock ring : Ni plated brass

5. Please use the "PA5" series (DC type) of our VA connector.  
 6. Rubber part for screw down is attached.  
 7. UL listed product. (File No. E252012, class 2 circuit)

$\leq 3$	$\leq 6$	$\leq 30$	$\leq 120$
$\pm 0.2$	$\pm 0.3$	$\pm 0.5$	$\pm 0.8$

06	ECOP10-1790	9-1 '10	T.O.	S.K.
05	ECOP10-0051	2-2 '10	S.S.	S.K.
04	ECO 06-1835	3-1 '07	T.O.	S.K.
03	ECO 05-0147	9-30 '05	Y.N.	S.K.
02	JEO 05-2020	2-28 '05	Y.N.	S.K.
01	JEO 03-2045	7-25 '03	S.S.	S.K.
改番 REV.	来歴 RECORD	: 日付 DATE	担当 BY	検閲 APPD.

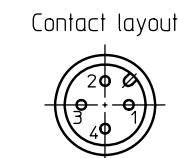
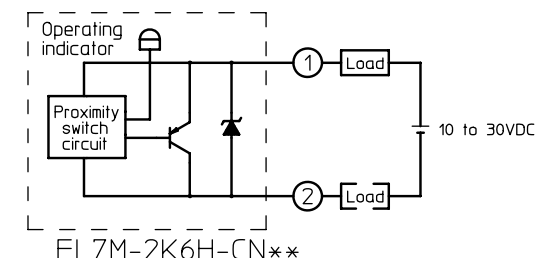
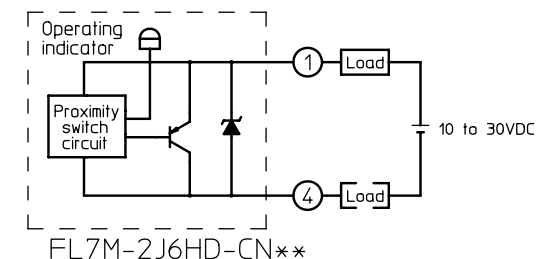
作成DR. K.Matsuda 1-28 '02	 尺度 SCALE 1 : 1	記入のない公差 TOL. UNLESS NOTED REFER ABOVE TABLE FOR TOL. UNLESS NOTED.
検図CHK. S.Suzuki 1-28 '02		
認可APPD. T.Nakao 1-28 '02	形番 MODEL	FL7M-2*6H(D)-CN**
日付 DATE	名称 NAME	Proximity switch
	図番 NO.	AD42172E
	改番REV.	06 / 1/3

SP. No.

2. Specifications

	FL7M-2J6HD-CN**	FL7M-2K6H-CN**	
Type	Eddy current killed oscillator		
Rated supply voltage	12V/24VDC		
Supply voltage	10 to 30VDC		
Leakage current	0.55mA max.		
Sensing distance	2±0.2 mm		
Standard target	8×8mm t1mm (SPCC)		
Hysteresis	15% max. of sensing distance		
Operating mode	Normally open (make)	Normally close (break)	
Output type	2-wire DC of transistor output		
Output	Load current ; 3 to 100mA Voltage drop ; 3.0V max. Output withstand voltage ; 30V		
Repetition	2000Hz min.		
Temperature drift	±15% of sensing distance (at +25℃) between -25 to +70℃		
Supply voltage drift	±1% of sensing distance (at rated voltage) between rated voltage ±15%		
Operating indicator (See Fig.1)	Green or orange 'ON' with output on	Orange 'ON' with stable range	
Setting range indicator (See Fig.1)	Green 'ON' with stable range		
Operating temperature	-25 to +70℃		
Insulation resistance	50MΩ min. (at 500VDC)		
Dielectric strength	1000VAC 50/60Hz 1 minute		
Vibration	10 to 55Hz 1.5mm double amplitude 2 hours in each direction of X,Y,Z		
Shock	980m/s <sup>2</sup> 10 times in each direction of X,Y,Z		
Sealing	IP67 (IEC standard), IP67G (JEM standard)		
Tightening torque	Nut	A part : 9Nm, B part : 12Nm (See Fig. 2)	
	Screw	0.6Nm (See Fig. 3)	
Insertion & pulling force of connector	0.4 to 4N (Per pin)		
Cycle of insertion and pull of connector	50 times min.		
Mass	Approx.40g (Only sensor with cord 1m)		
Circuit protection	Short current protection and wrong wiring protection		
EMC:Applied harmonized standard EN60947-5-2:2007			
EMC	Electro discharge	Level 3 6kV (contact discharge)	IEC61000-4-2:1995+A1:1998+A2:2000
	Radiated RF electromagnetic field	Level 3 10V/m	IEC61000-4-3:2006
	Electrical fast transients	Level 4 2kV (using the capacitive coupling clamp)	IEC61000-4-4:2004
	Conducted disturbances induced by RF fields	Level 3 10V	IEC61000-4-6:2003+A1:2004+A2:2006
	Power frequency magnetic field	Level 4 30A/m	IEC61000-4-8:1993+A1:2000

3. Connection diagram



Load can be connected to either of the lead wires.

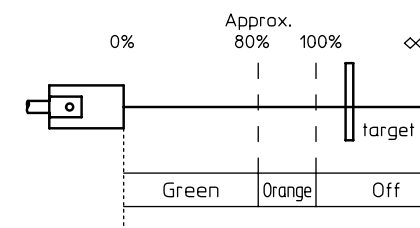


Fig.1 Indicator

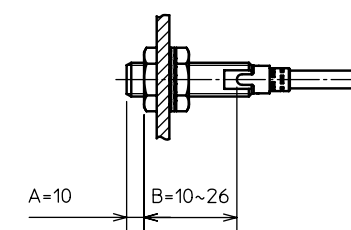


Fig.2

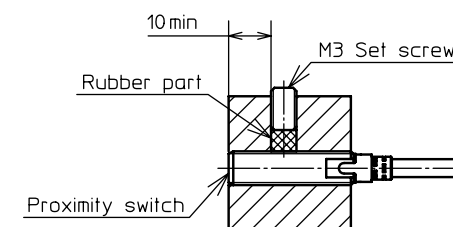


Fig.3 When FL7M-2\*6H(D)-CN\*\* is fixed with the M3 set screw, use a rubber part as a shock absorber.

作成DR. Y.Nishi. 1-28 '02	検図CHK. S.Suzuki 1-28 '02	認可APPD T.Nakao 1-28 '02	日付DATE	尺度SCALE	記入のない公差TOL. UNLESS NOTED
形番 MODEL		FL7M-2*6H(D)-CN**			
名称 NAME		Proximity switch			
図番 NO.		AD42172E		改番REV. 06	2

06	~	~	~
05	~	~	~
04	~	~	~
03	~	~	~

02	~	~	~
01	~	~	~
改番 REV.	来歴 RECORD	日付 DATE	担当 BY
			検閲 APPD.

SP. No.

4. Product revision change record

	Date	Catalogue listing	Product Rev. No.	Content of change
1	5-8 '06	All	01	RoHS compliance
2	4-1 '10	All	02	Change of the cord protector material

5. Product revision

The 2-digit product revision number is shown after the catalogue listing on the cord.

ex.: FL7M-2J6HD-CN03 01

①

②

① Catalogue listing

② Product revision number

Catalogue listing	Product Rev. No.
FL7M-2J6HD-CN*	02
FL7M-2K6H-CN*	02

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PAGE REV.


改番  
REV.

来歴  
RECORD

日付  
DATE

担当  
BY

検閲  
APPD.

作成DR. T.O. 3-1 '07		尺度 SCALE	記入のない公差 TOL. UNLESS NOTED
検図CHK. S.K. 3-1 '07	形番 MODEL	FL7M-2*6H(D)-CN**	
認可APPD. H.M. 3-1 '07	名称 NAME	Proximity switch	
日付DATE 3-1 '07	図番 NO.	AD42172E	改番REV. 3/06

SP. NO.	Yamatake Corporation		製品仕様書 SPECIFICATIONS			
	<b>Terms and Conditions</b>					
	<p>We would like to express our appreciation for your purchase and use of Yamatake products.          You are required to acknowledge and agree upon the following terms and conditions for your purchase of Yamatake products (field instruments, control valves, and control products), unless otherwise stated in any separate document, including, without limitation, estimation sheets, written agreements, catalogs, specifications and instruction manuals.</p>					
	<p><b>1 Warranty period and warranty scope</b></p>					
	<p><b>1.1 Warranty period</b>          Yamatake products shall be warranted for one (1) year from the date of your purchase of the said products or the delivery of the said products to a place designated by you.</p>					
	<p><b>1.2 Warranty scope</b>          In the event that Yamatake product has any failure attributable to Yamatake during the aforementioned warranty period, Yamatake shall, without charge, deliver a replacement for the said product to the place where you purchased, or repair the said product and deliver it to the aforementioned place.          Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:</p>					
	<p>(1) Failure caused by your improper use of Yamatake product          (noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);</p>					
	<p>(2) Failure caused for other reasons than Yamatake product;</p>					
	<p>(3) Failure caused by any modification or repair made by any person other than Yamatake or Yamatake's subcontractors;</p>					
	<p>(4) Failure caused by your use of Yamatake product in a manner not conforming to the intended usage of that product;</p>					
	<p>(5) Failure that the state-of-the-art at the time of Yamatake's shipment did not allow Yamatake to predict; or</p>					
	<p>(6) Failure that arose from any reason not attributable to Yamatake, including, without limitation, acts of God, disasters, and actions taken by a third party.</p>					
	<p>Please note that the term "warranty" as used herein refers to equipment-only-warranty, and Yamatake shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Yamatake products.</p>					
	<p><b>2 Ascertainment of suitability</b></p>					
	<p>You are required to ascertain the suitability of Yamatake product in case of your use of the same with your machinery, equipment, etc. (hereinafter referred to as "Equipment") on your own responsibility, taking the following matters into consideration:</p>					
	<p>(1) Regulations and standards or laws that your Equipment is to comply with.</p>					
	<p>(2) Examples of application described in any documents provided by Yamatake are for your reference purpose only, and you are required to check the functions and safety of your Equipment prior to your use.</p>					
	<p>(3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use</p>					
	<p>Although Yamatake is constantly making efforts to improve the quality and reliability of Yamatake products, there exists a possibility that parts and machinery may break down.          You are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, safety design, or the like so that the said Equipment may satisfy the level of the reliability and safety required in your use, whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth.</p>					
	<p><b>3 Precautions and restrictions on application</b></p>					
	<p>Yamatake products other than those explicitly specified as applicable (e.g. Yamatake Limit Switch For Nuclear Energy) shall not be used in a nuclear energy controlled area (radiation controlled area).          Any Yamatake products shall not be used for/with medical equipment.          In addition,          you are required to conduct a consultation with our sales representative and understand detail specifications, cautions for operation, and so forth by reference to catalogs, specifications, instruction manual, etc. in case that you intend to use Yamatake product for any purposes specified in (1) through (6) below.          Moreover, you are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design and other designs of protection/safety circuit on your own responsibility to ensure the reliability and safety, whereby preventing problems caused by failure or nonconformity.</p>					
	<p>(1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals</p>					
	<p>(2) For use of specific purposes, such as:</p>					
	<p>* Nuclear energy/radiation related facilities          [For use outside nuclear energy controlled areas]          [For use of Yamatake Limit Switch For Nuclear Energy]</p>					
	<p>* Machinery or equipment for space/sea bottom</p>					
	<p>* Transportation equipment          [Railway, aircraft, vessels, vehicle equipment, etc.]</p>					
	<p>* Antidisaster/crime-prevention equipment</p>					
	<p>* Burning appliances</p>					
	<p>* Electrothermal equipment</p>					
	<p>* Amusement facilities</p>					
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		REV.	RECORD	DATE	BY	APPD.

SP.NO.		Yamatake Corporation		製品仕様書 SPECIFICATIONS		
		<p>(3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability</p> <p>(4) Facilities that are to comply with regulations of governmental/public agencies or specific industries</p> <p>(5) Machinery or equipment that may affect human lives, human bodies or properties</p> <p>(6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety</p> <p><b>4 Precautions against long-term use</b></p> <p>Use of Yamatake products, including switches, which contain electronic components, over a prolonged period may degrade insulation or increase contact-resistance and may result in heat generation or any other similar problem causing such product or switch to develop safety hazards such as smoking, ignition, and electrification.</p> <p>Although acceleration of the above situation varies depending on the conditions or environment of use of the products, you are required not to use any Yamatake products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.</p> <p><b>5 Recommendation for renewal</b></p> <p>Mechanical components, such as relays and switches, used for Yamatake products will reach the end of their life due to wear by repetitious open/close operations.</p> <p>In addition, electronic components such as electrolytic capacitors will reach the end of their life due to aged deterioration based on the conditions or environment in which such electronic components are used.</p> <p>Although acceleration of the above situation varies depending on the conditions or environment of use, the number of open/close operations of relays, etc. as prescribed in specifications or instruction manuals, or depending on the design margin of your machine or equipment, you are required to renew any Yamatake products every 5 to 10 years unless otherwise specified in specifications or instruction manuals.</p> <p>Field instruments (sensors such as pressure/flow/level sensors, regulating valves, etc.) will reach the end of their life due to aged deterioration of parts.</p> <p>For those parts that will reach the end of their life due to aged deterioration, recommended replacement cycles are prescribed. You are required to replace parts based on such recommended replacement cycles.</p> <p><b>6 Other precautions</b></p> <p>Prior to your use of Yamatake products, you are required to understand and comply with specifications (e.g., conditions and environment of use), precautions, warnings/cautions/notices as set forth in the technical documents prepared for individual Yamatake products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.</p> <p><b>7 Changes to specifications</b></p> <p>Please note that the descriptions contained in any documents provided by Yamatake are subject to change without notice for improvement or for any other reason.</p> <p>For inquires or information on specifications as you may need to check, please contact our branch offices or sales offices, or your local sales agents.</p> <p><b>8 Discontinuance of the supply of products/parts</b></p> <p>Please note that the production of any Yamatake product may be discontinued without notice.</p> <p>For repairable products, we will, in principle, undertake repairs for five (5) years after the discontinuance of those products. In some cases, however, we cannot undertake such repairs for reasons, such as the absence of repair parts.</p> <p>For field instruments, we may not be able to undertake parts replacement for similar reasons.</p> <p><b>9 Scope of services</b></p> <p>Prices of Yamatake products do not include any charges for services such as engineer dispatch service. Accordingly, a separate fee will be charged in any of the following cases:</p> <p>(1) Installation, adjustment, guidance, and attendance at a test run</p> <p>(2) Maintenance, inspection, adjustment, and repair</p> <p>(3) Technical guidance and technical education</p> <p>(4) Special test or special inspection of a product under the conditions specified by you</p> <p>Please note that we cannot provide any services as set forth above in a nuclear energy controlled area (radiation controlled area) or at a place where the level of exposure to radiation is equivalent to that in a nuclear energy controlled area.</p>				
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