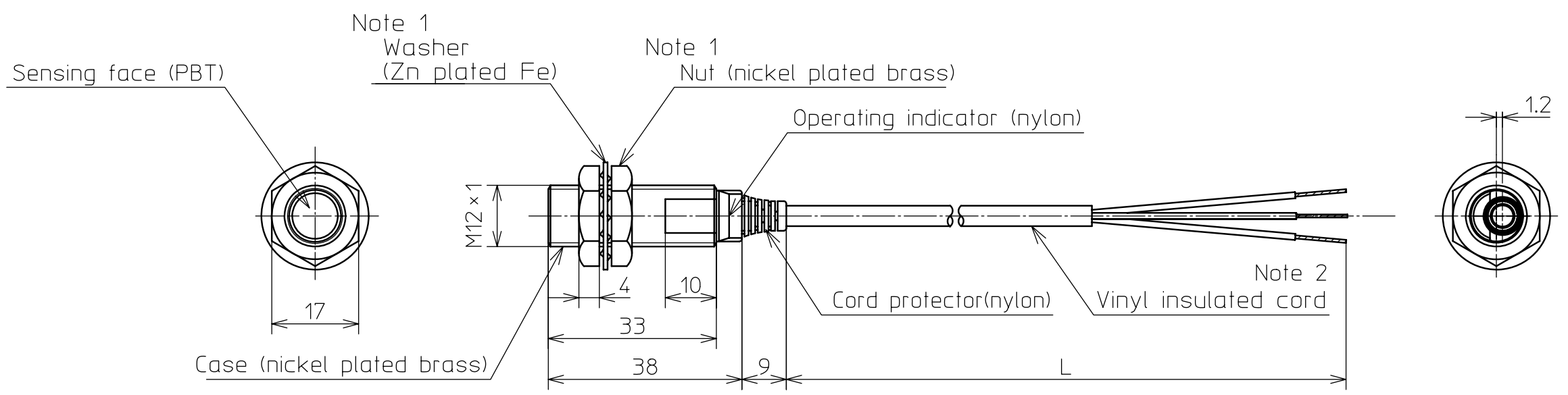


SP. No.

Catalog listing
FL7M-2A6
FL7M-2B6
FL7M-2D6
FL7M-2E6

1. Mounting dimensions



Note 1. Two nuts and a washer are attached.  
2. Kind of cord

Catalog listing	Kind of cord	Conductor cross-section	Composition of conductors	Material of conductors	Diameter	Cord length : L
FL7M-2*6	Standard oil resist cord	0.3mm <sup>2</sup>	60/φ0.08	Copper conductors	φ4	2000min.
FL7M-2*6-L5						5000min.

≦ 80	±0.95
≦ 50	±0.80
≦ 30	±0.65
≦ 18	±0.55
≦ 10	±0.45
≦ 6	±0.375
≦ 3	±0.3

3 02  
2 02  
頁 改番

02	ECOP10-2171	10-26 '10	T,O	S,K
01	EC007-0831	3-29 '07	T,O	S,K
改番 REV.	来歴 RECORD	: 日付 DATE	担当 BY	検閲 APPD.

作成DR. Y.Nishi 9, 27 '06	検図CHK. S.Kawai 9, 27 '06	認可APPD. H.Matsuno 9, 27 '06	日付 DATE	形番 MODEL FL7M-2*6 series	名称 NAME Proximity switch	図番 NO. AD42785E	改番 REV. 02	1/3
尺度 SCALE 1 : 1			記入のない公差 TOL. UNLESS NOTED 上記参照					

S.P. No.

Yamatake Corporation

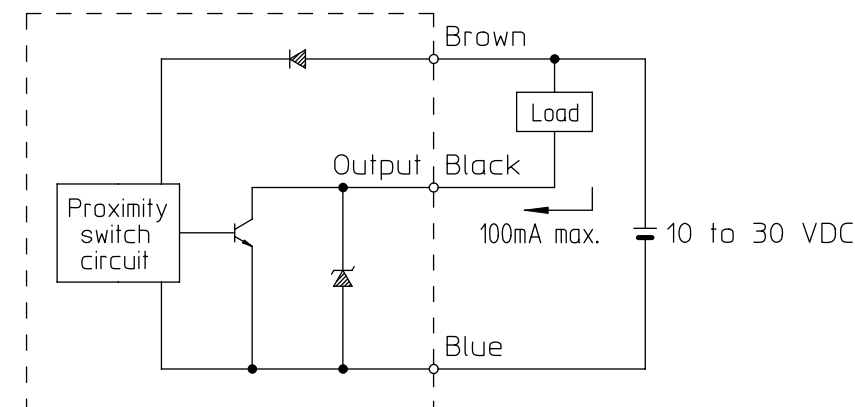
製品仕様書  
SPECIFICATIONS

2. Specifications

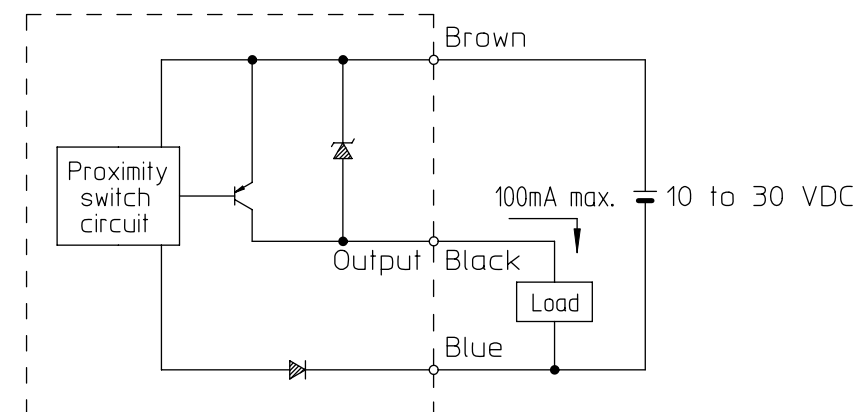
	FL7M-2A6	FL7M-2B6	FL7M-2D6	FL7M-2E6
Type	Eddy current killed oscillator			
Rated supply voltage	12V/24VDC			
Supply voltage	10 to 30VDC			
Sensing distance	2±0.2 mm			
Standard target	12×12×1mm (SPCC)			
Hysteresis	10% max. of sensing distance			
Current consumption	13mA max.			
Output type	Open collector of NPN transistor		Open collector of PNP transistor	
Operating mode	Normally open (make)	Normally close (break)	Normally open (make)	Normally close (break)
Output	Load current : 100mA max. (Resistive load) Voltage drop : 2V max. (at 100mA , cord length : 2m) Output withstand voltage : 30V			
Repetition	1.5kHz min.			
Temperature drift	±10% 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	Red 'ON' with output on			
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	1000m/s <sup>2</sup> 10 times in each direction of X,Y,Z			
Sealing	IP67 (IEC standard), IP67G (JEM standard)			
Tightening torque	20N·m			
Minimum bend radius of cord (Note 1)	R12			
Mass	Approx.90g (only sensor with cord 2m)			
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
	Radiated emission	Group1 ClassA		CISPR11:2003+A1:2004+A2:2006

Note 1. Take special care not to put stress on the cord or bend it sharply within 30mm of the cord outlet.

3. Connection diagram



FL7M-2A6, FL7M-2B6



FL7M-2D6, FL7M-2E6

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

作成DR. Y.Nishi 9, 27, '06	検図CHK. S.Kawai 9, 27, '06	認可APPD H.Matsuno 9, 27, '06	日付DATE	尺度SCALE ~	記入のない公差 TOL. UNLESS NOTED ~
形番 MODEL		FL7M-2*6 series			
名称 NAME		Proximity switch			
図番 NO.		AD42785E		改番REV. 02	2/



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.);          (2) Failure caused for other reasons than Yamatake product;          (3) Failure caused by any modification or repair made by any person other than Yamatake or Yamatake's subcontractors;          (4) Failure caused by your use of Yamatake product in a manner not conforming to the intended usage of that product;          (5) Failure that the state-of-the-art at the time of Yamatake's shipment did not allow Yamatake to predict; or          (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>          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.          (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.          (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>          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          (2) For use of specific purposes, such as:</p>					
	<p style="padding-left: 40px;">* Nuclear energy/radiation related facilities          [For use outside nuclear energy controlled areas]          [For use of Yamatake Limit Switch For Nuclear Energy]          * Machinery or equipment for space/sea bottom          * Transportation equipment          [Railway, aircraft, vessels, vehicle equipment, etc.]          * Antidisaster/crime-prevention equipment          * Burning appliances          * Electrothermal equipment          * 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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		REV.	RECORD	DATE	BY	APPD.