Customer:

No.: SS-2014-8803

Date: Mar. 11, 2014

Attention:

Your ref. No .:

Your Part No.: 7GZHUXIAOYUN-SANER

SPECIFICATIONS

ALPS Model : RD7081018A

ALPS Spec. No .:

ALPS Sample No.: 0 0 2 0 7 3 2 5 3 4

RECEIPT STATUS	
RECEIVED	
Det Dete	
By. Date	
Signature	
Name	
Title	



DSG'D

APP'D

ENG. DEPT.

Sales

Head Office 1-7, Yukigaya-otsuka-machi, Ota-ku, Tokyo, 145-8501 Japan Phone,+81(3)3726-1211

SPECIFICATIONS

1. THIS SPECIFICATIONS APPLY TO RD7081018A LINEAR SENSOR.

2.CONTENTS OF THIS SPECIFICATIONS.

3.MARKING

• MARKING ON ALL UNITS DATE CODE,RESIST. VALUE,TAPER

• NOTES

•Marking in specifications shows standard and condition for application.

• CAUTION

- 1.For the export of products which are controlled items subject to foreign and domestic export laws and regulations, you must obtain approval and/or follow the formalities of such laws and regulations.
- 2.Products must not be used for military and/or antisocial purposes such as terrorism, and shall not be supplied to any party intending to use the products for such purposes.

3.Unless provided otherwise, the products have been designed and manufactured for application to equipment and devices which are sold to end-users in the market, such as AV (audio visual) equipment, home electric equipment, office and commercial electronic equipment, information and communication equipment or amusement equipment. The products are not intended for use in, and must not be used for, any application of nuclear equipment, driving control equipment for aerospace or any other unauthorized use. With the exception of the above mentioned banned applications, for applications involving high

levels of safety and liability such as medical equipment, burglar alarm equipment, disaster prevention equipment and undersea equipment, please contact an Alps sales representative and/or evaluate the total system on the applicability. Also, implement a fail-safe design, protection circuit, redundant circuit, malfunction protection and/or fire protection into the complete system for safety and reliability of the total system.

- 4.Before using products which were not specifically designed for use in automotive applications, please contact an Alps sales representative.
- 5. The products shall be stored in the original packaging and kept at room temperature and humidity, out of direct sunlight, and away from any and all corrosive gas. The products shall be completely used as soon as possible, but no later than 6 months from the date of delivery.

Once product packaging is opened, the complete quantity of such products shall be promptly used.

		Т													
CLASS	N O .		TITLE	LINE	R F.E	E D B A C	K	SENSOR	S P	EC	IFIC/	TION			
	1-1.道 当	■項 Genera ■用範囲 Scop ≦仕様書はリニア形)e ∛7∢-ド												
	W	he specifi (ith carbon ised as a L	compo	ositi	on r	esisto	Dr,								
	<u></u> し	標準状態 Stan 則定は特に指定のな inless othe or making r	:い限り、 rwise	次の状態 spec	態で行う :ifie), d. the	e st	tandaro	1 ra	nge	of	atmosphe	lic cond	itions	
		相対湿度	Ambl Rela Air	tiv	e hu	umidi		:	25	5 t	0 35 0 85 0 10	5°C 5_% 26kPa			
	1	且し、判定に疑義が f there is heasurement	anv d	doubt	abo	ut the	ere in 1	esults. the fol	low	ina	ılim	its			
		温度 相対湿度	Ambl Rela	ent tive	tem e hu	npera umidi	tu	re :	2 C 6 C) ±) t	2°(0 7(C D %			
-	1-3 使 1-4 保	^{ス圧} 使用温度範囲 OP R存温度範囲 St	Air erat orag	ing	tem	npera	tu re	: re ra rang	nge):	-4()6kPa) to +1 to +105	105°C 5°C		
	2-1外 各 T	き Constru 観 Appear 部の仕上げは良好 he potentio rack.split	ance て機能上 ometer	有害な sha	ll h	ave no	b da	amage a	ind	not	have	e any ex	cessive	rust,	
	個 T W	法 Diment 別製品組立図によ he physica ith the pro	る。 l dime oduct	ensio draw	ing.					rs	hall	be in a	ccordance	9	
	3. 電気	い いけい いっしい いっしゅう いっしゅう いっしゅう いっしゅう いんしょう いんしん いんしゅう しんしゅう いんしょう しんしゅう いんしゅう しんしゅう しんしゅう しんしゅう いんしゅう しんしゅう いんしゅう しんしゅう しんしゅう しんしゅう いんしゅう しんしゅう いんしゅう いんしゅ いい い い い い い い い い い い い い い い い い い	tric T	al (acte ondit						Snac	ificatio	ne	
		項目		条件									格格		
	3 - 1	公称全抵抗值 Nominal total resistance and tolerance	Measure	抵抗器の端子1-3間の抵抗を測定。 Measurement shall be made by the resistance between terminal 1 and 3.								4.7	k Ω ± 2 0 %		
	3 - 2	定格電圧 Power rating											. 12V±(D. 1 V	
	3 - 3	最高使用電圧 Operating voltage endurance										D.C	. 18V		
	3-4	出力電圧比	測定点	Point	測定1	位置 Mea	surem	ent positi	ion						
		Output voltage ratio	A an	dΒ		自立図上C t A and I		と日点 er to the	produ	ict di	rawing		40		
			A'		出力 6.25%の位置 The output shall be 6.25%								. 5±0. 51 from the A p		
			Bí									93. 75			
											:				
	L	L													
	-					A		PS I	<i>E </i>	E	CT	RIC (<u>., co.,</u>	LT	D.
				APPD.	NG2G	CHKD. M-EN	GZ	DSGD. M-ENG		ΪTL		CIFIC	ATIONS	- -	
				(10-1	1-08 3UCH1	(<u>10-11</u> OHAR	-08	(10-11- SHIMIZ	08)0CU	MENT	N O .			
SYMB	DATE	APPD CHKD	DSGD		/				ŢĹ	-	5 R	D708A	038	. (1/4)
														Γ	$\overline{\mathbf{D}}$

CLASS NO.

LINER FEEDBACK SENSOR SPECIFICATION

V(1-2) V(1-2) 100% Interface interface in the defined the periods of valation on traveled between point A'and B compared with the ideal straight line which is chained outputs at the point A' and B on each products. 				
3 5 Linearity 実測出力値VA、VBを結応だ直線を理想直線とし、端子1-3 間への印加電圧を100%とした時、その理想直線に対する偏差 を%で表す。 ± 1 % 出力電圧比(%) な%で表す。 ごちゃいきにものなどした時、その理想直線に対する偏差 出力帯性は図1参照 Output voltage ratio on traveled between point A' and B compared with the ideal straight line which is chained outputs at the point A' and B on each products. 測定速度 : 1mm/S Measurement speed : At 1mm/s. lever travel 出力特性は図1参照 Output wave form See fig.1 3 - 6 ビステリシス Hysteresis 当項目については、レバーと治具そのもののビステリシスが 問題となるため、疑義が生じた場合、アルフ*ス製専用治具で 測定のごと。 ± 1 % 3 - 7 絶縁抵抗 Insulation resistance 端子一枠間にD. C. 50V 1分間印加する。 The voltage of 50V D.C. shall be applied between individual terminals and case for 1 min. 1 0 0 M Q 以上 or more 3 - 8 耐電圧 Dielectric strength 端子一枠間にA. C. 124V 1分間印加する。 The voltage of 124V A. C. shall be applied between individual terminals and case for 1 min. 損傷、アーク、絶縁破壊がないごん Without damage to pars arcing o breakdown. 3 - 9 過電圧耐久 Overvoitage 端子1-3間にD. C. 24V 1分間印加する。 The voltage of 24V D. C. shall be applied between individual terminals and case for 1 min. 損傷、アーク、絶縁破壊がないごん Without damage to pars arcing o breakdown.				
S=0 Hysteresis 問題となるため、疑義が生じた場合、アルフ・ス製専用治具で 測定のこと。 ±1% This iten shall be maesured by using os ALPS measurement equioment, because it is susceptible to measuring conditions. ±1% 3=7 絶縁抵抗 Insulation resistance 端子-枠間にD. C. 50V 1分間印加する。 The voltage of 50V D. C. shall be applied between individual terminals and case for 1 min. 100 M Q 以上 or more 3=8 耐電圧 Dielectric strength 端子-枠間にA. C. 124V 1分間印加する。 The voltage of 124V A. C. shall be applied between individual terminals and case for 1 min. 損傷、アーク、絶縁破壊がないこの Without damage to pars arcing of breakdown. 3=9 過電圧耐久 Overvoltage 端子1-3間にD. C. 24V 1分間印加する。 The voltage of 24V D. C. shall be applied between terminals 損傷、アーク、絶縁破壊がないこの Without damage to pars arcing of breakdown.	3 - 5	Linearity 出力電圧比(%) Output voltage ratio	実測出力値VA、VBを結した直線を理想直線とし、端子1-3 間への印加電圧を100%とした時、その理想直線に対する偏差 を%で表す。 The linearity shall be defined the percentage of variation on traveled between point A' and B compared with the ideal straight line which is chained outputs at the point A' and B on each products. 測定速度 : 1mm/S	
3 - 8 Insulation resistance The voltage of 50V D. C. shall be applied between individual terminals and case for 1 min. 1 0 0 M Q 以上 or more 3 - 8 耐電圧 Dielectric strength 端子一枠間にA. C. 124V 1分間印加する。 The voltage of 124V A.C. shall be applied between individual terminals and case for 1 min. 損傷、アーク、絶縁破壊がないこの between individual without damage to pars arcing or breakdown. 3 - 9 過電圧耐久 Overvoltage 端子1 - 3間にD. C. 24V 1分間印加する。 The voltage of 24V D.C. shall be applied between terminals 損傷、アーク、絶縁破壊がないこの breakdown.	3 - 6		問題となるため、疑義が生じた場合、アルフ [・] ス製専用治具で 測定のこと。 This item shall be maesured by using os ALPS measurement	± 1 %
Dielectric strengthThe voltage of 124V A.C. shall be applied between individual terminals and case for 1 min.Without damage to pars arcing o breakdown.3-9過電圧耐久 Overvoltage端子1-3間にD.C.24V 1分間印加する。 The voltage of 24V D.C. shall be applied between terminals損傷、アーク、絶縁破壊がないこく Without damage to pars arcing o Without damage to pars arcing o Without damage to pars arcing o	3 - 7	Insulation	The voltage of 50V D.C.shall be applied between individual	
Overvoltage The voltage of 24V D.C.shall be applied between terminals Without damage to pars arcing o	3 - 8	Dielectric	The voltage of 124V A.C.shall be applied between individual	損傷、アーク、絶縁破壊がないこと。 Without damage to pars arcing of breakdown.
	3 - 9	Overvoltage	The voltage of 24V D.C.shall be applied between terminals	損傷、アーク、絶縁破壊がないこと。 Without damage to pars arcing of breakdown.

機械的性能 Mechanical characteristics 機械的性能は 5RD7001-300Mによる。

Mechanical characteristics shall be in accordance with the document No. 5RD7001-300M attached.

5. 耐久性能 Endurance characteristics

TITLE

	Item 項目	Conditions 条件	Specifications 現格
5 - 1	耐久性能後の 現格 Specified characteristics after test. endurance with load		リニアリティ Linearity ±2% ビステリシス Hysteresis ±2% 作動力 Operation force 2N MaX. 全抵抗値規格は各々の試験項目欄に記載。 Total resistance is specified individually in each test.
5 – 2	負荷摺動寿命 Endurance with load	 摺動回数 : 100,000サイクル (1往復を1サイクルとする。) Sliding cycle : 100,000 cycles (1 cycle is go and return) 摺動速度 : 0.5~30mm/S. Sliding speed : 0.5~30mm/s. 摺動範囲:摺動移動距離の90%以上 Sliding range : 90% of electrical range 負荷 :指定の定格電圧 load : With specified voltage load 	全抵抗値:初期値 ±35% Total resistance : Initial value ±35% その他、5-1項の規格による。 Except above items. refer to the 5-1 items.
		APPD. CHKD. DSGD. TITLE M-ENG2G M-ENG2 SPE	RIC CO., LTD.
			NU.

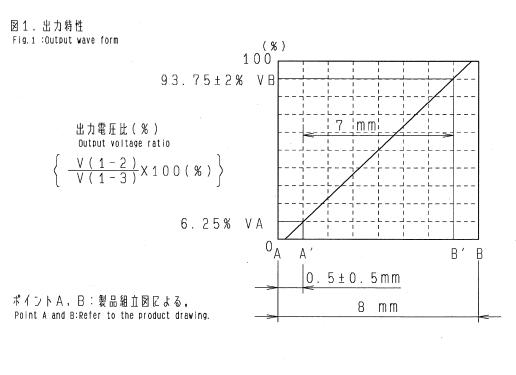
CLASS NO.

TITLE

LINER FEEDBACK SENSOR SPECIFICATION

	ltem 項目		Conditions 条件		Specifications 規格								
5 - 3	耐寒性 Cold	Tempe 放置時	度 : -40±2°C rature : -40±2°C 間 : 96±4時間放置後取り出 拭き取り、常温常湿中に1 : 96±4 hours and stand in a room of and humidity for 1 hour without potentiometer shall be maintained atmospheric conditions for 1 hour measurement shall be made.	時間放置後測定する。 [*] normal temperature oad And then the at standard	გ. s.								
5 - 4	耐熱性 Dry heat	Tempe 放置時	度 : +105±2°C rature : +105±2°C 間 : 96±4時間放置後取り出 拭き取り、常温常湿中に1 : 96±4 hours and stand in a room of and humidity for 1 hour without potentiometer shall be maintained atmospheric conditions for 1 hour measurement shall be made.	時間放置後測定する。 [*] normal temperature oad.And then the at standard	全抵抗値:初期値 ^{+25%} Total resistance : Initial value +25% / -50% その他、5-1項の規格による Except above items, refer to the 5-1 items								
5 - 5	耐湿性 Damp heat	湿	rature : +40±2°C 度 : 90~95%	全抵抗值:初期值 ^{+55%} Total resistance : Initial value +55% / -25%									
		放置時	Humidity : 90 - 95%R.H 放置時間 : 96±4時間放置後取り出し、表面の水分を 拭き取り、常温常湿中に1時間放置後測定する。 Time : 96±4 hours and stand in a room of normal temperature and humidity for 1 hour without load. And then the potentiometer shall be maintained at standard atmospheric conditions for 1 hour.after which measurement shall be made.										
5 - 6	温度サイクル Change of temperature	1時間 30 su	下記条件で30サイクル試験後、常温常湿中に1時間放置後 1時間以内に測定する。 30 succesive change of temperature cycles, and stored in a room of nomal temperature and humidity for 1 hour without load. 文の他、5-1項の規格 Except above items,										
		段階 step	温度 temperature	放置時間 Duration	refer to the 5-1 items	.							
		1	-40±2°C	30分 minuit									
		2	常湿 Standard atmospheric condition	10-15分 minuit									
-		З	+105+2°C	30分 minuit									
		4	常湿 Standard atmospheric condition	10-15分 minuit									

				· · · · · · · · · · · · · · · · · · ·
CLASS	N O .]	TITLE LINER FEEDBACK SENSOR SPECIFICA	TION
			LINER FEEDDACK SENSOR SPECIFICA	TION
		ltem 項 目	Conditions 条件	Specifications 規格
	5 - 7	耐振性 Vibration	10~55~10Hzと変化する振動(1周期1分/振幅1.5 mm)をX,Y,乙各方向に2時間加える。(計6時間)	全抵抗値:初期値 ±25% Total resistance:
			The following vibration shall be applied to the potentiometer, after which measurement shall be made. The entire frequency range, from 10 to 55Hz and return to 10Hz, shall be transversed in 1m. Amplitude(total excursion):1.5mm This motion shall be applied for a period of 2 hours in each of 3 mutually perpendicular axes(a total of 6 hours).	Initial value ±25% その他、5-1項の規格による。 Except above items, refer to the 5-1 items.
	5 - 8	はんだ耐熱 Resistance to soldering heat	(1)ディップはんだの場合 Dip soldering はんだ温度:260°C以下 Solder temperature: 260°C or less	全抵抗値:初期値 ±25% Total resistance : Initial value ±25% 枠の変形、端子の過剰な緩みのないこと。
			時 間 :5秒以内 Immersion time : Within 5s 使用基板板厚:個別製品組立図による Printed wiring board:Accodance with the product drawing. 使用基板材質:片面観張フェノール積層板	また、電気的性能を満足すること。 Without deformation of case or excessive looseness of terminals. Electrical characteristics shall be satisfied.
			Material of the board : One-side Copper cladded phenoric laminated board. (2)手はんだの場合 Manual soldering はんだ温度:350°C以下 Bit temperature of soldering iron: 350°C or less 時 間 :3秒以内 Immersion time : Within 3s	



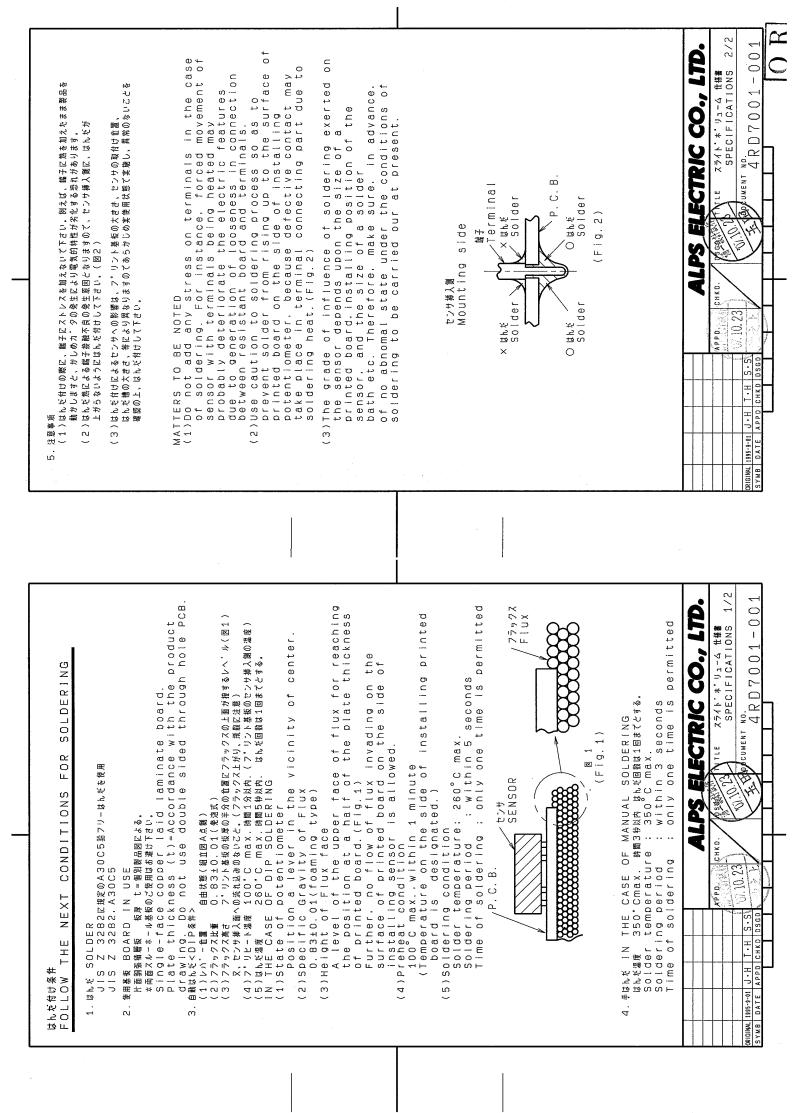
			· · ·				A	LF	PS E	L	E	CTI	RIC	: CO.	, L	۲D.
					APPD M-E	NG2G	CHKD. M-EN	G2	DSGD. M-ENG2	7		SPE		ICATIO	NS	
SYMB	DATE	APPD	СНКО	DSGD		<u>11-08</u> DBUCH1	(10-11-08) OHARA		(10-11-08 SHIMIZU		DOCUMENT NO. 5 R D 7 O 8 A O 3 8 (4/				(4/4	

CLASS.NO.

リニア形フィードバックセンサ規格書 LINEA FEED BACK SENSOR SPECIFICATION

TITLE

機械的性能 Mechanical characteristics No. 項目 Item 条件及び規格 Conditions or Specifications 1-1 カストローク 個別製品組立図による。 Accordance with the product drawing. Lever travel 1-2 作動力 2N以下 or less 測定位置 : レパー先端より 1mm の位置 Operating force 測定速度 :10 mm / 秒 Operating position: 1 mm from the lever end. Traveling speed: 10mm/sec 1-3 レパーの移動止強度 摺動距離の両末端においてレハー先端より<u>1mm</u>の位置に、<u>10N</u>の静荷重を5秒間加え、著しい ガタ、および接触不良を生じないこと。 Lever travel 測定はプリント基板に半田付し、プリント基板を固定した状態で行う。 Stop strength 但し、縦型形状の製品は、図1の様に製品上部も固定した状態で測定のこと。 A static load of <u>10 N</u> shall be applied at the point 1 mm from lever end for both end in the direction of lever travel for <u>5 sec.</u>, without excessive play or poor ontact. The measurement conditions see Fig.1 1-4 レパーの先端から<u>1mm</u>の位置に、レパーの移動方向に対して直角方向に 10Nの静荷重を5秒間 レパーの横押し強度 加え、操作部、および関連部品に変形、破損がないこと。 Side thrust 測定プリント基板に半田付し、プリント基板を固定した状態で行う。 of the lever 但し、縦型形状の製品は、図1の様に製品上部も固定した状態で測定のこと。 A static load of <u>10 N</u> shall be applied at the point <u>1 mm</u> from lever end in a direction perpendicular to the axial direction for 5 sec. without de deformation or breaks in the sliding part and contact part. The measurement conditions see Fig.1. 1-5 レパーの押し引き強度 レパーの押し方向および引張り方向に 10Nの静荷重を 5 秒間加え、レパーのかタ、破損、及び しゅう動ムラ等がなく、電気的性能を満足すること。 Thrust and Thrust and tensile static load of 10 N shall be applied to tensile lever the potentiometer in the lever direction for 5 sec., without damage such as bad sliding and braking or play in the lever. And the electrical characteristics shall be satisfied. The measurement conditions see Fig.1. 1-6 レパーの横振れ 0.5 mm P-P以下 レハー先端より3mmの位置に2Nの静荷重を移動方向に対して直角方向に加え測定する。 Displacement 0.5mm P-P or less, of the lever A static load of <u>2 N</u> shall be applied at the poin<u>t 1 mm</u> from lever end in a direction perpendicular to the axial direction and then the displacement shall be measured at the point 3 mm from lever end. 1-7 レパーの傾き及びねじれ <u>θは2度以下</u> Lever inclination θ shall be 2° or less and torsion 1-8 レパーのセンタースレ 片側 0.5mm 以下 0.5mm 以下 Distance from 枠開口部中心に対するレパーセンターからのずれを片側ごと測定する。 the center of 0.5 mm or less on each end. the lever After sliding lever as far as it will go in each direction, the distance from the center of the lever to the center of the case shall be measured at the both ends. (図 1) 固定 (Fig.1) FIX P.C.B 半田 SOLDERING ALPS ELECTRIC CO., LTD. . APPD. CHKD. DSGD. Dec. 3, 2001 Dec. 3. 2001 Dec. 3. 2001 CHKD. TITLE . ٠ 規格書 SPECIFICATIONS • . y Jamuda DOCUMENT NO. <u>M. A</u> <u>S, S</u> Vigina <u>99 10°8</u> <u>T.H</u> S, Suda 5RD7001-300M 1 APPD. CHKD: Ψ́MB DATE DSGD. (規格・仕様書用紙) W7306 A 4



接続インピーダンスについて About impedance

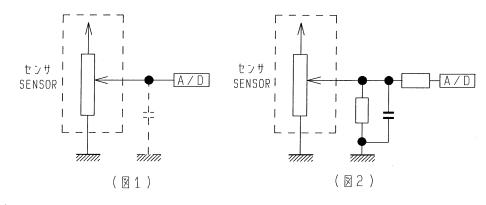
本製品は、図1のように、その出力端子をマイコンのA/Dポートに直接接続して 使うことを前提に製作されています。つまり、接続インピーダンスの値はメグオームオーダーを 前提とし、センサ内部の接触抵抗をかなり高めに設定しています。 よって、図2のような回路でご使用になる場合は、接続インピーダンスが1MΩ以下に ならないように、ご配慮願います。

(

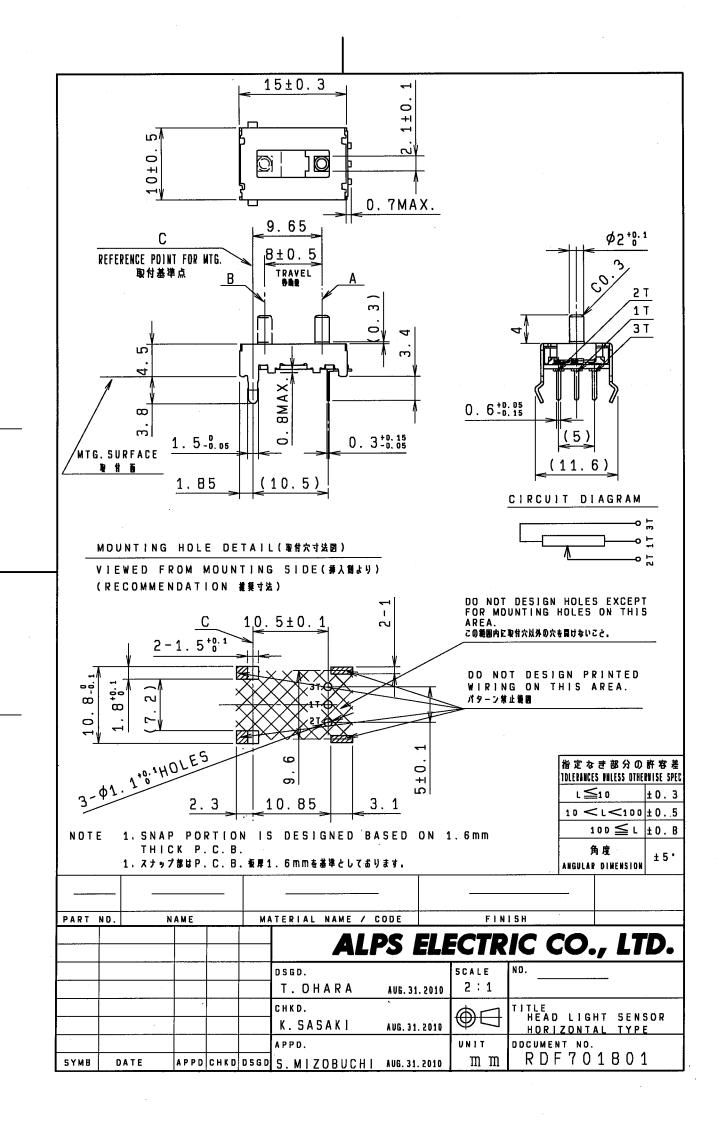
/

)

Since this sensor is designed to use with its output is connected directly to the A/D port, impedance is considered to be mega ohm level, then contact resistance in the sensor is higher. Please refer to fig-1. So when you use it in the circuit like fig-2, please make sure that impedance should be over than $1M\Omega$.



							A	LP	PS E	LE	CTI	R <i>I</i> C	CO., LT	D.
					APPD M-2	\sim	СНКО. М-2	友 友	SGD. M-2技	TIT	LE	SPE	CIFICATIONS	
SYMB	DATE	APPD	СНКО	DSGD	· 12- 溝	<u>01-13</u> 渕	<u>(12-01</u> 佐々木 (-13 7	<u>12-01-13</u> 清水	Doc	UMENT		D7001-00	4
			T										ž	and the second second second



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Potentiometers category:

Click to view products by ALPS manufacturer:

Other Similar products are found below :

5805X4Q25F102SP 5805X4Q25F103ZP 58C2-2 5905X1N32F103SS 5915XJ48S252SC 5915XP56S252SC 5915XP56S503SC D31409 70B1G048K502X-A 70B1M032S502W 70B1N056S202W 70B8N056F502W 70J8N048S104U 70L1N040P103W 70L1N048P103X 70L1N048S103W GA2G056S101UA GA2G056S251UA GA2G056S501UA GA2L040S102UC GA2L040S103UC GA2L040S501UC GS1G044P103UA GS1T032S103UA A43-1500 A43-20K A47-200K A4720K RK14K1220-F25-C0-A103 RK14K1220F25C0C104 RK14K1220-F25-C1-B103 14910FBGLFY00103KA C0342008 5K J97589 RV170F-10-15R1-B500K-0021 917523A A43-40 A43-750 A43S-5 A47-15K A47-1K A4750K SPPG056P103U SWE-10 GA2G040F103BA GA2G056S503UA GA2G056S504UA GA2L040S502UC GA2L040S503UC POT-3217-02 (MW22S-3217-500)