Contactless Joystick
Joystick à contact nul

Commercial Information

Manufactured by PML Flightlink
Ref.Manufacturer

Distributed by [Radiospares](#)
Ref. Distributer **162-984**

General Features

The RS contactless joystick employs an inductive sensing system and is recommended for applications where the operational life time is the limiting factor The joystick is designed to give an output voltage swing directly comparable with 270° potentiometers in a 55° joystick, i.e. giving a voltage swing equivalent to + and -10% of the supply voltage. The sensing system operates at impedances of only a few hundred Ohms and is therefore not sensitive to moisture. The electronics are sprayed with protecting varnisi~. The copper windings are totally potted, and only brass and stainless steel are used elsewhere. The screening can is black anodised aluminium, and the main body glass filled Nylon The gaiter is Neoprene, and the retainina bezel Acetal. The knob is Bakelite, retained by a chemically blacked tolerance ring.

- Joystick électronique utilisant un système inductif sensible sans contact, d'une longue durée de vie.
- D'une grande robustesse, il ne fait aucun bruit.
- Ce joystick est employé pour délivrer une tension en sortie comparable à un potentiomètre 270° en un joystick de 55°.
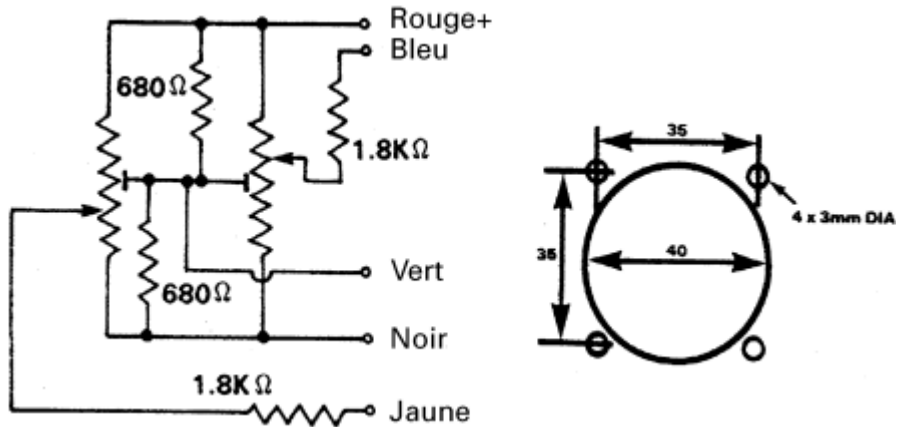
Technical Specifications

- Supply 4.75V to 15V
- Current drain * 15mA
- Operatinq Frequencv 20kHz (nom.)
- Output impedances 1.8 kOhms (Sinnals) 0 34 kOhms (centre tap)
- Ripple Deflection Voltage/100
- Noise Nil
- Cen1re Tap Voltage * 5V+/- 10mV (relative to green centre tap)
- Incremental Resollltion Infinite
- Response time 5mS (exponential)
- Voltage Swing * 1V +/- 10%
- Life 10 million cycles
- Sensor Wear rate Nil

Tension d'utilisation: 4,75 V à 15 V

Tension de sortie: 4 à 6 V (V alim.: 10 V)

Intensité: 15 mA

Durée de vie: 10 millions d'opérations

Diamètre du corps: 40 mm

Longueur totale: 115 mm

Profondeur arrière panneau: 60 mm

Temps de réponse: 5 ms

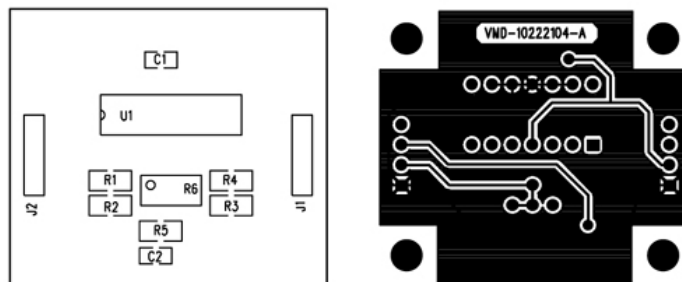Exemple: V alim. = 10 V (Vs = 5 V ±10 mV)

Electrical Specifications

Mechanical Specifications
Technical drawings
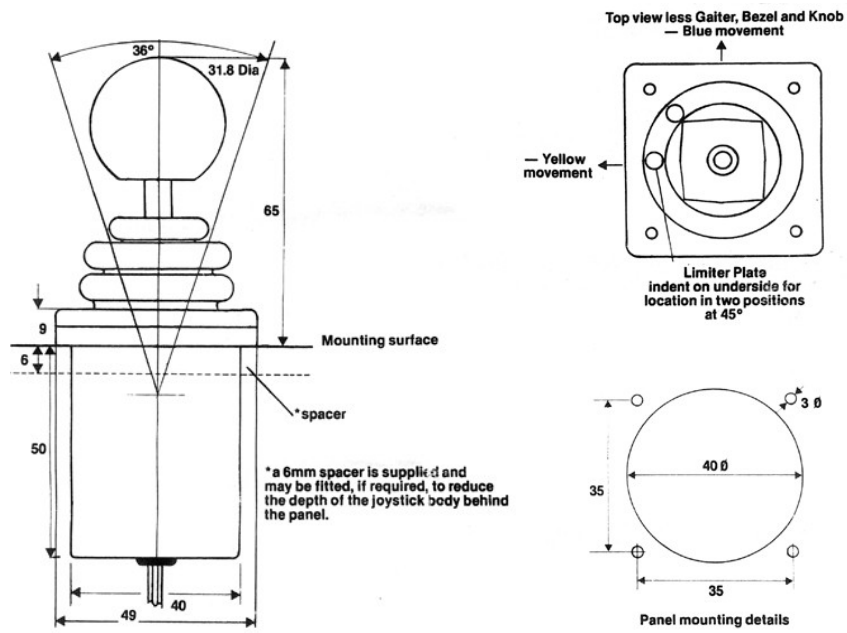
Interface Board :

(JOYSTICK_SCH.PDF)
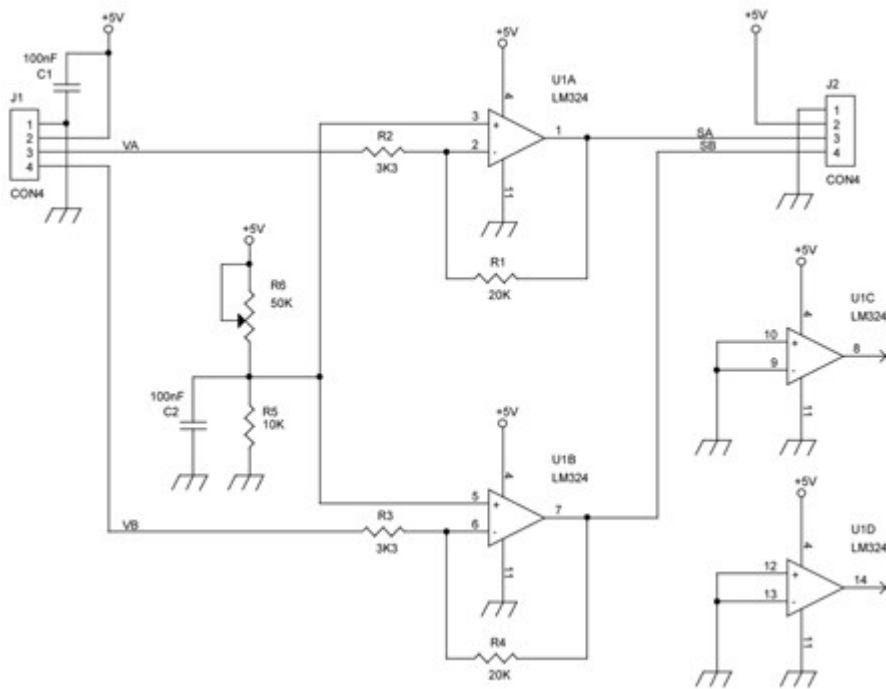

Installation Notes

LIMITER PLATE

A square limiter plate is supplied fitted to the joystick body to control the throw of the stick, this limiter plate has a choice of 2 orientations: square to the body or at 45° to the body. Two round limiter plates are also supplied.

Mounting Information:

36° 31.8 Dia

65

9

Mounting surface

6

50

*spacer

*a 6mm spacer is supplied and
may be fitted, if required, to reduce
the depth of the joystick body behind
the panel.

49   40

Top view less Gaiter, Bezel and Knob
— Blue movement

— Yellow
movement

Limiter Plate
indent on underside for
location in two positions
at 45°

3 Ø

40 Ø

35

35

Panel mounting details

Wiring Notes

(JOYSTICK_SCH.PDF)

EMBASE DIN 6 Cts/F
COTE BOITIER ARRIERE

CONNECTEUR HE10-10 Cts/F
A CONNECTER SUR LA CARTE MERE ARRIERE

CABLE BLINDE 4 CONDUCTEURS 0.22MM2
L:30CM

JOYSTICK IN   JOYSTICK OUT

NOIR OV   OV
ROUGE 5V   5V
BLEU X   X
JAUNE Y   Y

CARTE JOYSTICK (ROBOSOFT)

VERT NON CONNECTE

FICHE DIN 6Cts/M

4   Y
3   X
2   5V
1   OV

LONGUEUR DE CABLE 1X4 (0,22mm2):1M
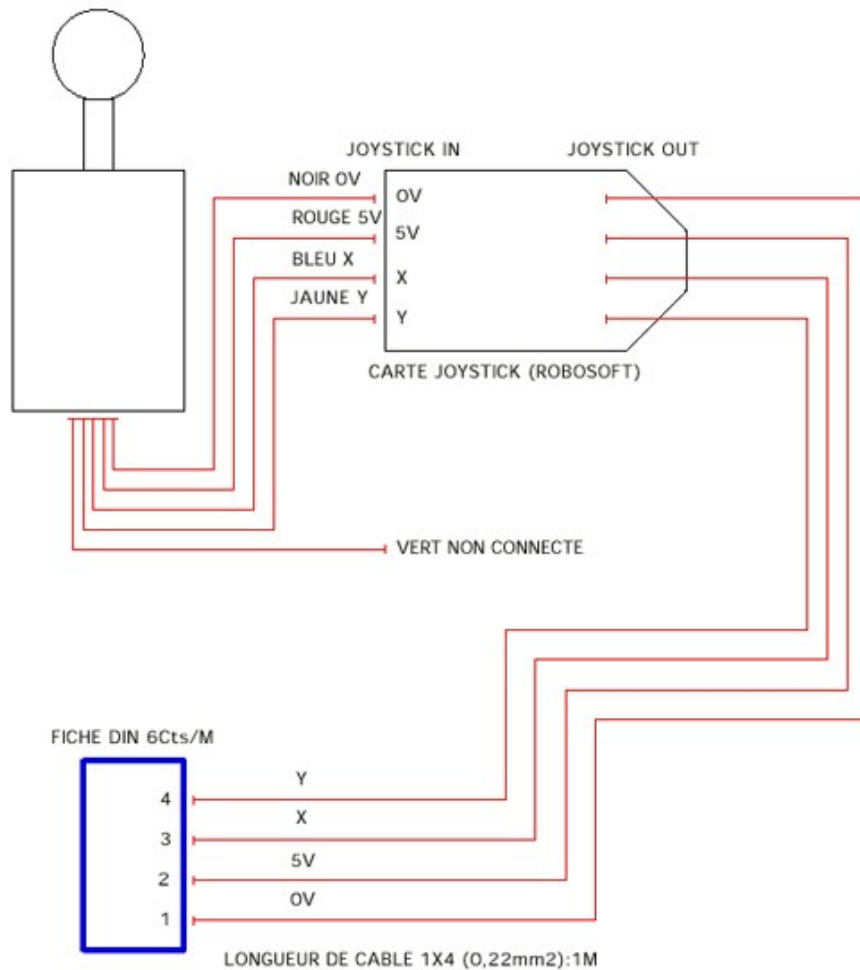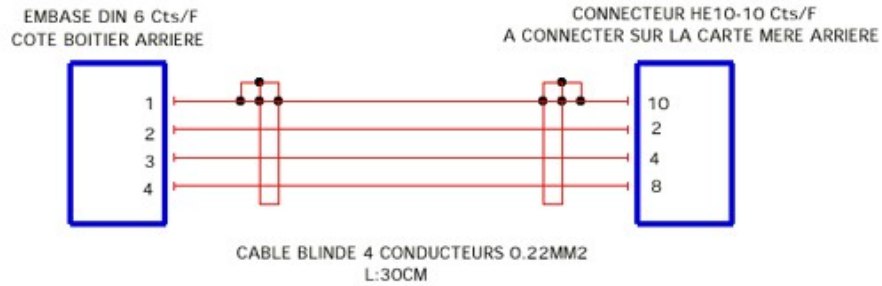
Developer Specifications

The Joystick supply an operational voltage from 4.75V to 15V . Then is adapted to a range from 0 to 5V, using the interface board, in order to connect this signal to the Analogical Inputs (Connector 4) in the microcontroller .

When Joystick is cabled , a little potentiometer placed in the interface board set the level of conversion of the signal. Using the ADC module in the microcontroller, the signal is convert to a digital value from 0 to 1024 units. When joystick is free it is placed at the center of both coordinates (we refers like the "*home position*"), at this position ADC returns a value around 455 units for X coordinate (for example).

At this point we take the values in order to calibrate the joystick, once calibrate theses values are

fixed in the program like constants .

This measured signal are continuously oscillating around an average value (+/- 10 units aprox) even when there is no changes in the joystick position.

To avoid this "noise" two software solutions are implemented:

- To give a joystick value, 10 measurements are take continuously and then the average is returned.
- A "*Dead Zone*" of 20 units are considered around the Center values of each coordinate. (In order to avoid that noises gives signals that can be translate like small velocity commands when vehicle is ON and joystick free)

Here the reference tables for both coordinates:

- Jstk X : Value X from the Joystick, translate as Angle (CentreX - RangeX, CentreX + RangeX)

CentreX - RangeX	CentreX	CentreX + RangeX
155	455	755
9B	1C7	2F3
Angle		
+MaxAngle	0 deg	-MaxAngle

- Jstk Y : Value Y from the Joystick, translate as Velocity (CentreY - RangeY, CentreY + RangeY)

CentreY - RangeY	CentreY	CentreY + RangeY
165	460	765
A5	1CC	2FD
Velocity		
-MaxVelocity	0 m/s	+MaxVelocity