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# ELECTRIC PROPORTIONAL JOYSTICKS JEOP

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Description:	Page 3
Applications:	Page 4
Tecnical features:	Page 5
Diagrams and metering curves:	Page 6.7.8
Mounting dimensions:	Page 9.10.11
Control device configuration:	Page 12
Proportional output configuration:	Page 13.14
Directional micro-switches configuration:	Page 15
Control handles:	Page 16
Rubber boots:	Page 17
Ordering key:	Page 18







### **Description:**

The purpose of the Fluidea electric proportional joystick JEOP is to servo control remotely devices actuated by electric or electro-hydraulic systems, like main directional valves, selector vales, actuators, hydraulic pumps and motors with variable displacement, brakes and clutches. The analogue output signal with variable voltage is usually converted to a digital PWM pulsing current signal with adjustable frequency by an electronic regulator, either already fitted in the system or available within our ELR product range.

The movement of the control lever of the joystick, through a robust and tested mechanical linkage made with antiwear materials, operates linear long life potentiometers, which stroke varies with the lever deflection angle and gives a voltage output signal proportional to the stroke.

This remote control sistem is specially reccomended for the applications, where there are several devices operating sequentially or at the same time, which require a precise, compact and ergomomic control device and permit the operation with minimum effort of several functions in an easy, precise, intuitive way. In addition to simplify and speed the working cycle, the safety of the operator and the surrounding environment is optimized, because his attention is focused on the operating functions, without looking away for seeking the other controls, as it often happens when lever and pushbuttons are dislocated in the panel of the cabin.

JEOP joysticks are extremely compact and light, and, at the same time, they are robust and reliable, having been developed specifically for application on machines operating in harsh ambient conditions.

Special attention has been dedicated to the choice of the components, to ensure their maximum life cycle, reliability and worlwide availability. The accurate choice of the materials, the surface treatments to prevent wear and oxidation, the dust proof body, ensure a very good protection in any working condition.

The JEOP joysticks can be combined with all the FLUIDEA range o grips, including palmar, straight and ergonomic multifunctoin options, which allow the integration of more "on-off" and proportional controls like pushbuttons and roller to optimize the ergonomy and to minimize the cost of the control system.

A further improvement of the JEOP versatility is the optional directional "on-off" microswitches on each of the 4 movements North-South-East-West of the control lever.



They are activated when the lever is moved away from the rest position. This option is used to control auxiliary signals as acoustic or light signalling devices, or additional functions to optimize features and safety.

The system can be integrated with armrest, panel or portable control dashboards with customized wiring to quickly adapt the system to any requirement with quick deiveries and at a competitive cost.



# **Applications**



Typical applications of "on-off" joystick series JEOP are agricultural machines, as tractors, moving grass cutters, pick-up machines, viticulture and oliveculture machines, and also forest machines, material handling machines, construction machines, street maintenance machines, fishing boats and industrial plants.







### **Technical features**

#### Joystick:

- Mechanical life
- Maximum angle deflection
- Body material
- Plunger materials
- Plunger guide material
- Microswitch brackets material
- Rubber boot material
- Protection degree
- Ambient temperature

#### Potenziometers:

- Maximum input voltage
- Electrical life:
- Mechanical life
- Protection degree
- Ambient temperature
- Operating stroke
- Operating force
- Body material:

#### **Microswitches:**

- Maximum current
- Maximum voltage
- Electrical life
- Mechanical life
- Protection degree
- Ambient temperature
- Operating stroke
- Operating force
- Release force
- Terminal material
- Body material:
- Approvals

#### Wires:

- Terminal material
- External insulation material
- Wire sleeve material
- Wire section
- Rope making wires
- Approvals
- Standard length

> 5x1 <sup>6</sup> cycles

20° movements on X-Y axis 26° combined movements

Aluminium alloy 6060 Stainless steel AISI 420 Bronze Aluminium alloy 6060 Neoprene

IP 64 --20 ÷ + 85 °

30 VDC 5x10<sup>6</sup> cycles 1.000.000 cycles IP 40 from - 40 to +125°C 12,7 mm ± 0,38 mm 4,00 N max Thermoplastic

10 A inductive - 16 A resistive 250 VAC 100.000 cycles @ max current 1.000.000 cycles IP 54 from -55 to + 85°C 2,4 mm max 3,00 N max 0,75 N min Cadmium silver alloy Thermoplastic CE, CSA, UL, VDE

Tinned copper strands Silicon or PVC Black polyester fibre 0,50 mm<sup>2</sup> Class 6 VDE 0295 UL - CSA - HAR 500 mm (other length on request)

The data and the technical features in this catalogue are not binding. The manufacturer reserves the right to carry out modifications, by its unquestionable judgement and without prior notice, in order to improve its products. The manufacturer is not responsible for damage to people or properties caused by an improper use of the product.



# Electric diagram and metering curve 1





Microswitches activation angle is 2° in any direction



# Electric diagram and metering curve 2





Microswitches activation angle is 2° in any direction



# Electric diagram and metering curve 3





Microswitches activation angle is 2° in any direction



# **Overall dimensions**

Standard dual axis joystick without handle, with rubber boot type Q



 $(\alpha 3)$  Maximum for combined movements



Mounting holes Valid for all configurations



### **Overall dimensions**

Dual axis joystick with straight handle without pushbuttons and rubber boot type Q





# **Overall dimensions**

Dual axis joystick with ergonomic handle without pushbuttons and rubber boot type Q





# Control device configuration





# Proportional output configuration

Without potentiometer 00





# Proportional output configuration





00

# Directional microswitches configuration

Without microswitch





# **Control handles**

For a detailed configuration of the handle, please refer to the technical catalogue of the required model







Ζ

# Rubber boot

Without rubber boot





### Ordering key



#### THE COMPREHENSIVE RANGE OF MANUFACTURED AND MARKETED COMPONENTS INCLUDES:

- Hydraulic gear and axial piston pumps & motors
- Directional control valves & selector valves
- Proportional EH pressure reducing valves & manifold blocks
- Hydraulic, pneumatic and electric on-off & proportional joysticks
- Control electronics
- Radio controls, push buttons stations, dashboards and armrests
- Multifunction ergonomic, cylindrical & palm grips
- Hydraulic filters & contamination control systems
- Heath exchangers and cooling systems
- Fluid monitoring & diagnostic instruments
- Bell housings, driving flanges & elastic couplings



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