

# Fluidea

*...we know how!*



## SINGLE AXIS ELECTRIC JOYSTICKS JEOPM

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### Description 1

JEOPM Fluidea electric proportional joysticks are available only in single-axis configuration.

Their function is to control remotely electric or electro-hydraulic users such as directional control valves, selector valves, various types of actuators, variable displacement hydraulic pumps and motors. The variable voltage analogue output signal is typically converted into a PWM pulsating current digital signal with adjustable frequency, by interposition of an electronic regulator, already present in the system or available within the Fluidea ELR range.



*PWM proportional electronic regulator applicable on the DIN type connector of the proportional coil which activates the actuator spool.*

The movement of the joystick control lever, through a robust and tested mechanical kinematic mechanism made of wear-resistant materials, operates long-lasting linear potentiometers, the stroke of which varies with the angle of inclination of the control lever and generates an analogic output signal in tension, proportional to its movement.

This remote control system is particularly suitable for those applications in which there are numerous users operating in sequence or simultaneously, that require a precise, compact and ergonomic control device, to allow the operator to manage multiple uses, in a simple way, accurate and intuitive, with minimal effort.

In addition to simplifying and speeding up the work cycle, the safety of the operator and the surrounding environment is optimized, as his attention is concentrated on the operating functions, without the need to look away looking for commands, as often happens when levers and buttons are mounted on panels variously located in the control cabin.

Extremely compact and light, JEOPM joysticks are at the same time robust and reliable, having been developed for use on machines operating in harsh environmental conditions.



Particular attention was paid to the choice of components to ensure maximum durability, reliability and availability of the same. The careful choice of materials, the antioxidant and wear-resistant surface treatments of all the metal parts and the waterproofing of the body ensure optimal protection in any condition of use.

*Plunger assembly driving the linear potentiometers, made in stainless steel and bronze*

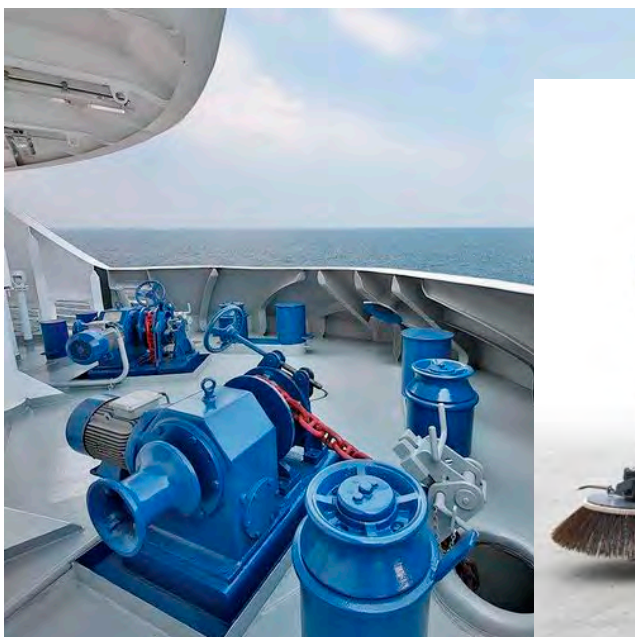


### Description 2 & applications

All JEOPM joysticks are equipped with a versatile kinematic mechanism located at the joint of the control lever that allows the optional insertion of a an adjustable friction disc to transform the standard function with lever that returns to neutral to that with lever that stops in any release position. This is an essential function for those machines which have to move at a constant speed set by the operator according to the needs that arise from time to time (harvesting machines, translation of self-propelled vehicles, winches, on-board cranes). Finally the optional directional micro switches that can be applied on the 2 North-South movements of the control lever and activated upon exiting and returning from the neutral position, to control auxiliary signals such as light or acoustic signaling devices, or complementary services to optimize functionality and safety.

JEOPM joysticks can be combined with all the multifunction handles available within the FLUIDEA range, which includes palm, cylindrical and ergonomic options to allow the integration of "on-off" and proportional auxiliary controls with push buttons and rollers that optimize ergonomics and cost of the complete control system.

*Typical applications of the single axis proportional joysticks JEOPM include various types of agricultural machinery, forestry machinery, material handling and lifting machines, construction machines, winches for cableways, windlass winches, board cranes, industrial systems, snow groomers and road sweepers.*



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.

## Technical features

### Joystick:

- Mechanical life	> 5x 10 <sup>6</sup> cycles
- Maximum angle deflection	30° movements
- Body material	Aluminium alloy 6060
- Plunger materials	Stainless steel AISI 420
- Plunger guide material	Bronze
- Microswitch brackets material	Aluminium alloy 6060
- Rubber boot material	Neoprene
- Protection degree	IP 64
- Ambient temperature	-20 ÷ + 85

### Potentiometers:

- Maximum input voltage	30 VDC
- Electrical life:	5x10 <sup>6</sup> cycles
- Mechanical life	1.000.000 cycles
- Protection degree	IP 40
- Ambient temperature	from - 40 to +125°C
- Operating stroke	12,7 mm ± 0,38 mm
- Operating force	4,00 N max
- Body material:	Thermoplastic

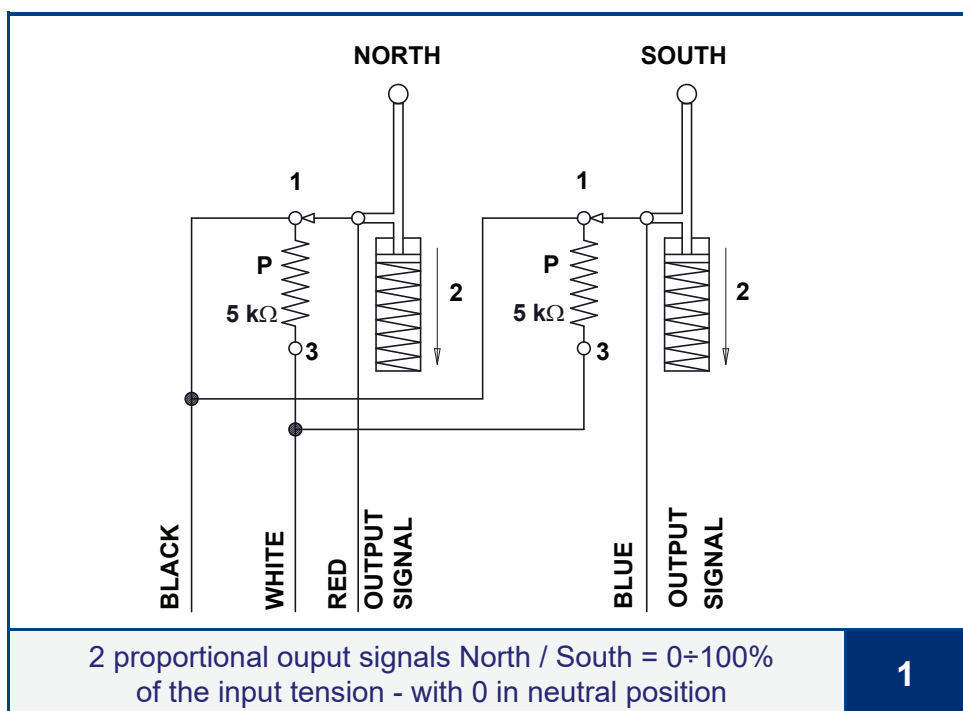
### Microswitches:

- Maximum current	10 A inductive - 16 A resistive
- Maximum voltage	250 VAC
- Electrical life	100.000 cycles @ max current
- Mechanical life	1.000.000 cycles
- Protection degree	IP 54
- Ambient temperature	from -55 to + 85°C
- Operating stroke	2,4 mm max
- Operating force	3,00 N max
- Release force	0,75 N min
- Terminal material	Cadmium silver alloy
- Body material:	Thermoplastic
- Approvals	CE, CSA, UL, VDE

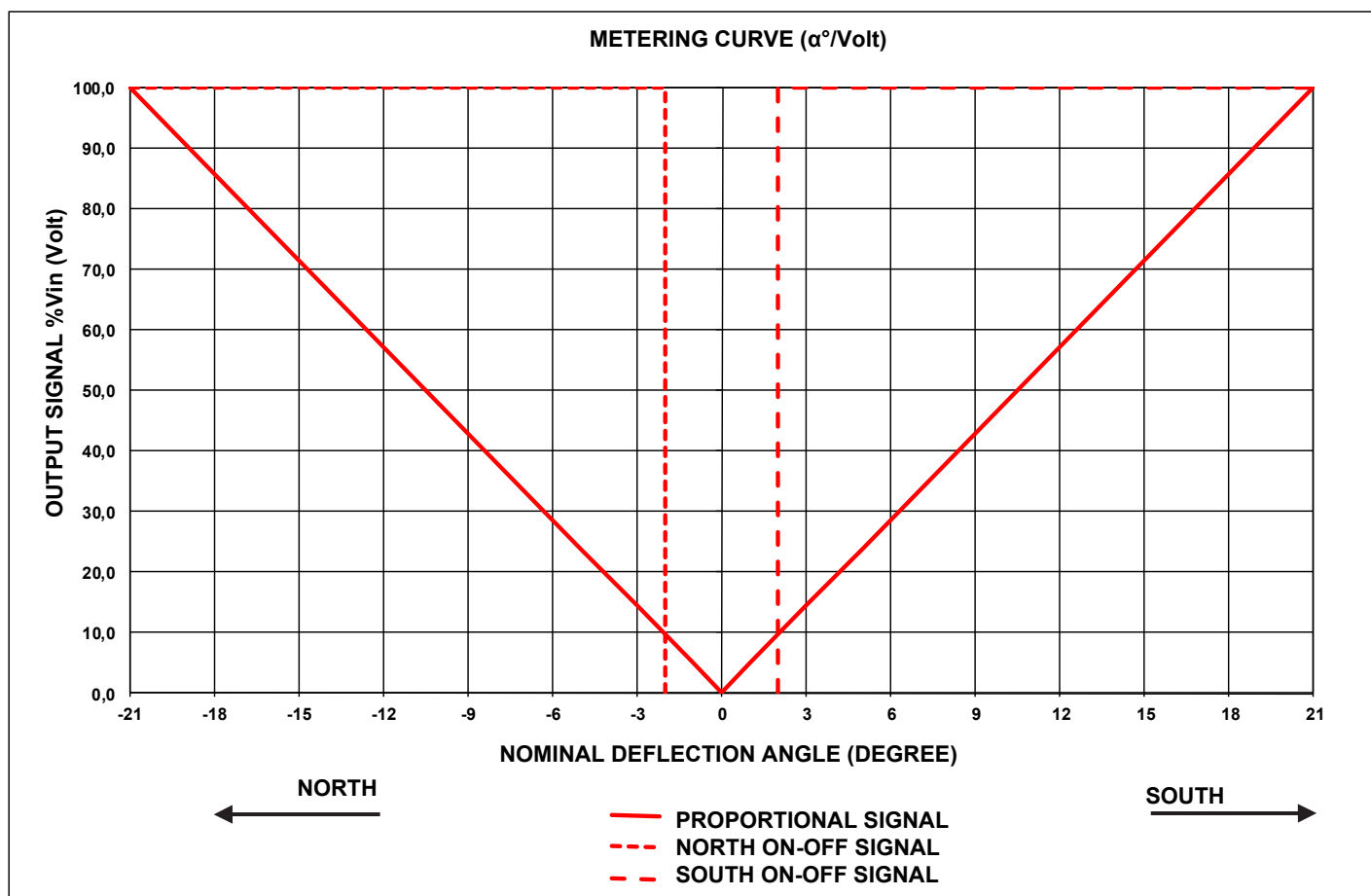
### Wires:

- Terminal material	Tinned copper strands
- External insulation material	Silicon or PVC
- Wire sleeve material	Black polyester fibre
- Wire section	0,50 mm <sup>2</sup>
- Rope making wires	Class 6 VDE 0295
- Approvals	UL - CSA - HAR
- Standard length	500 mm (other length on request)

### Electric circuits and metering curves diagrams 1

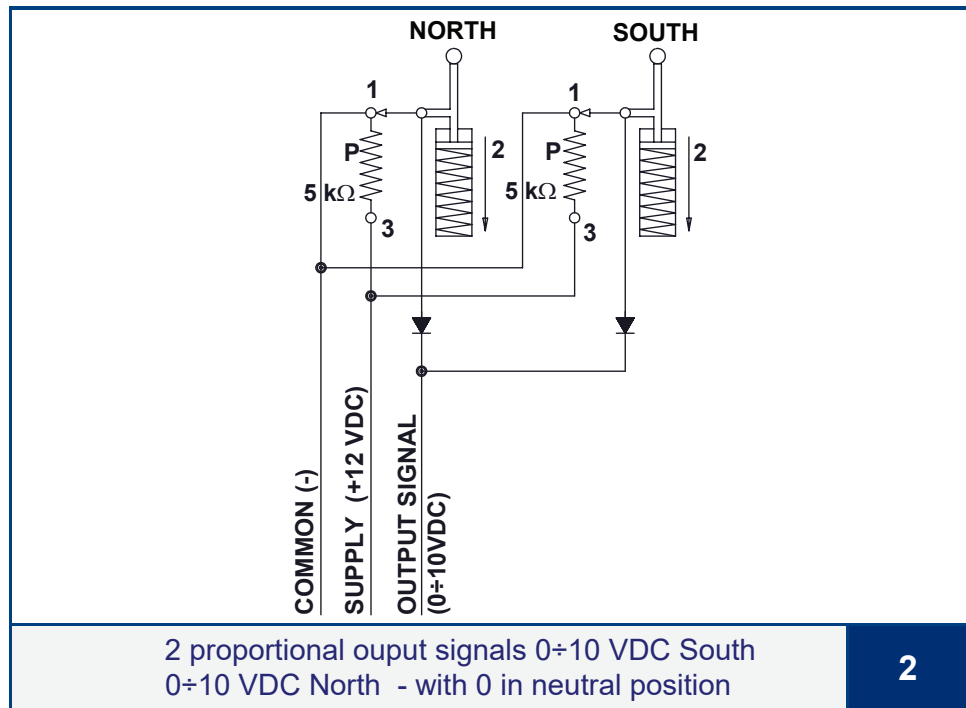


1

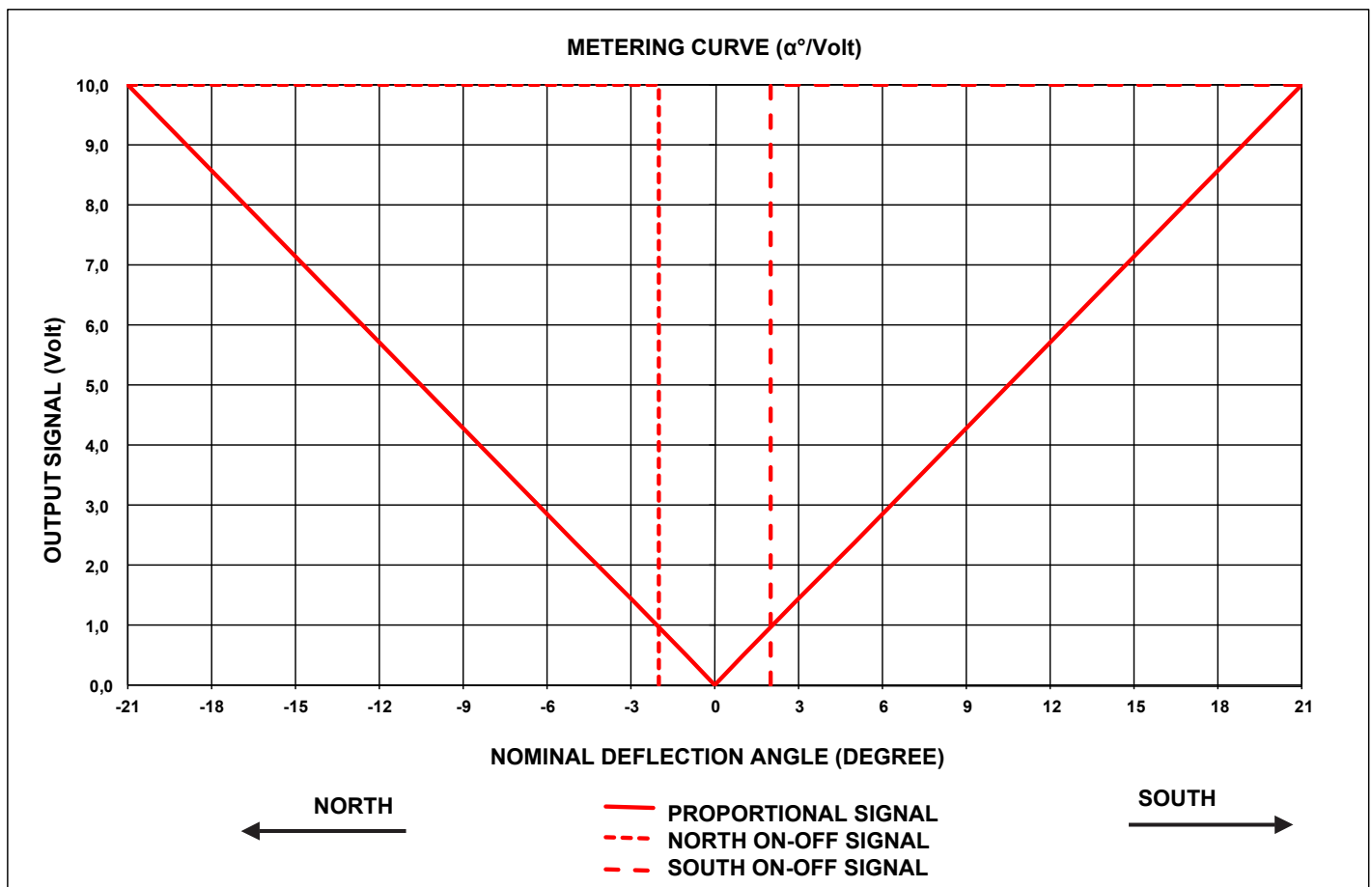


The operating angle of optional micro-switches is 12° North or South directions

### Electric circuits and metering curves diagrams 2

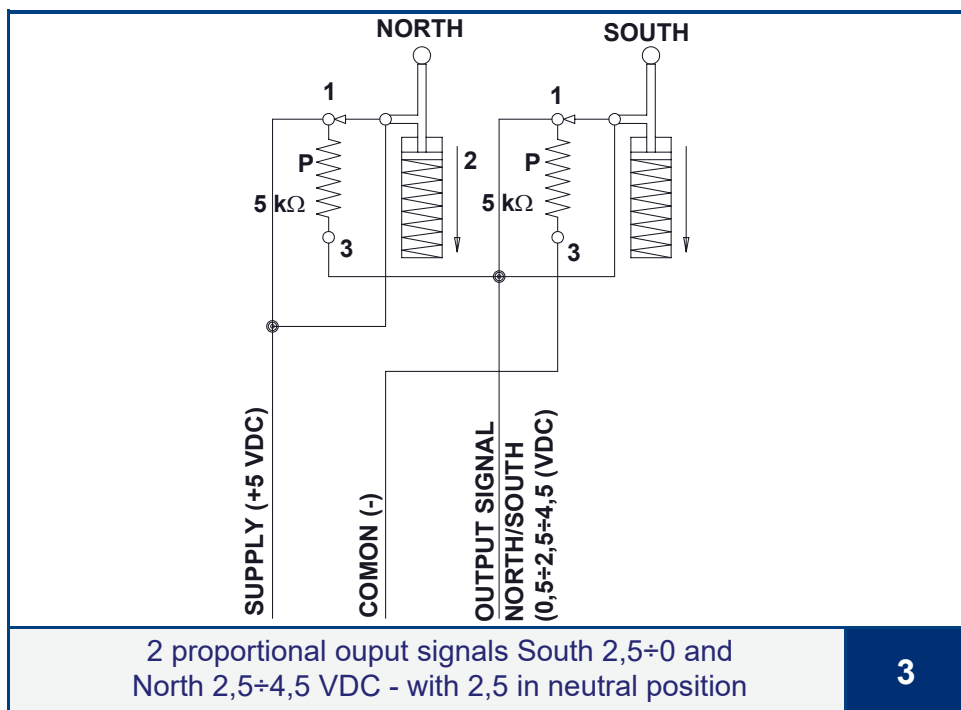


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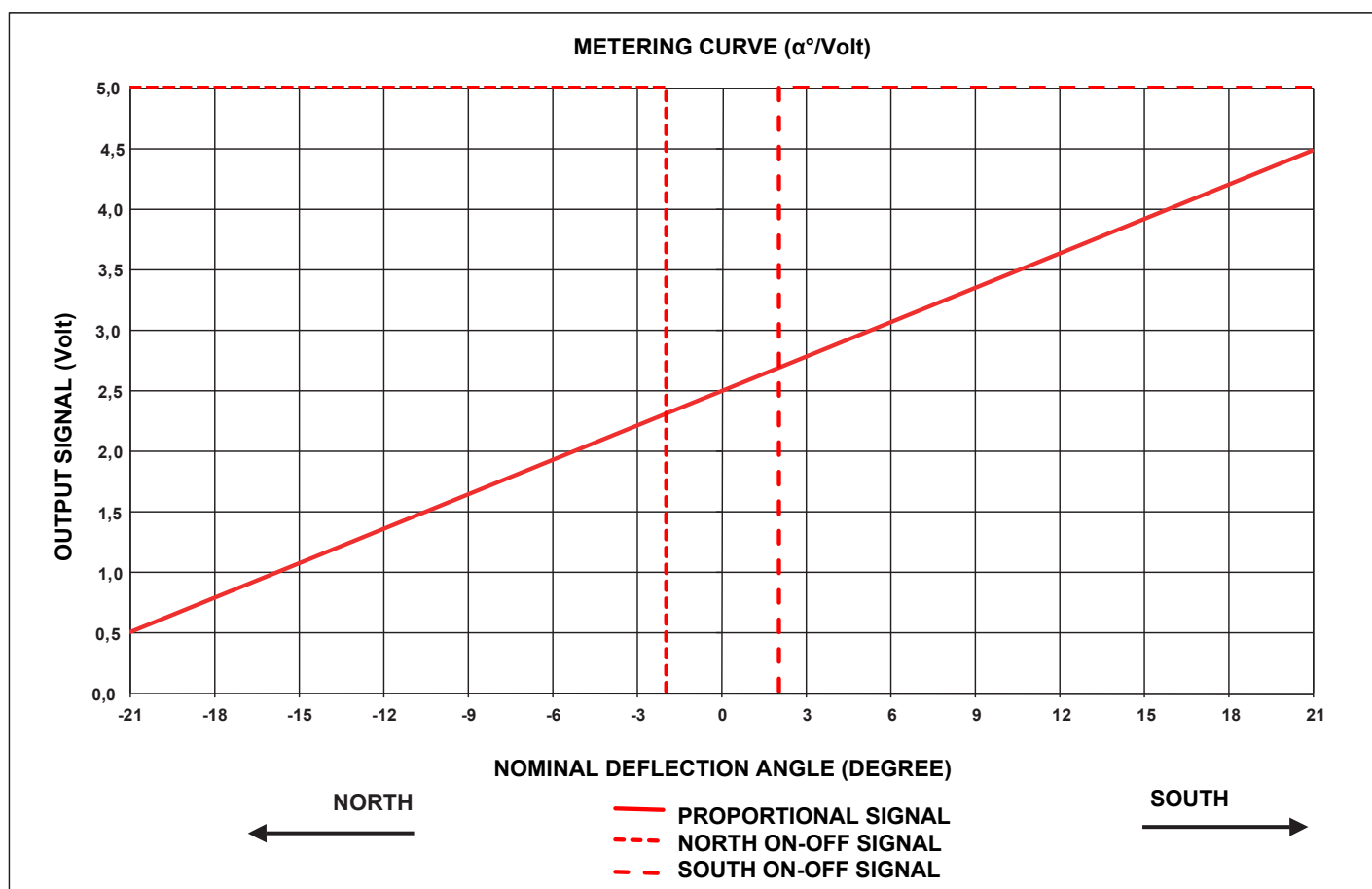


The operating angle of optional micro-switches is 12° North or South directions

### Electric circuits and metering curves diagrams 3



3

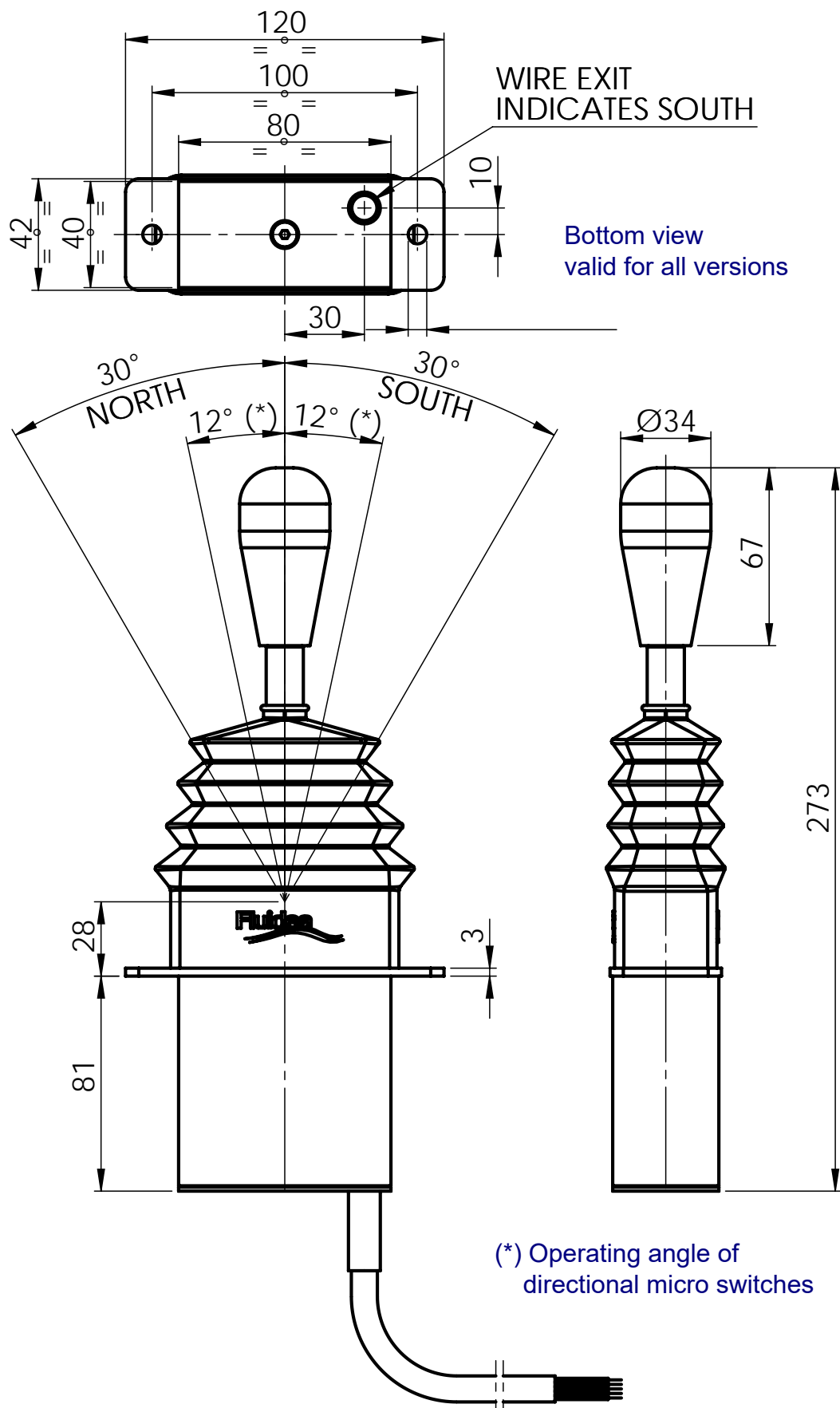


The operating angle of optional micro-switches is 12° North or South directions



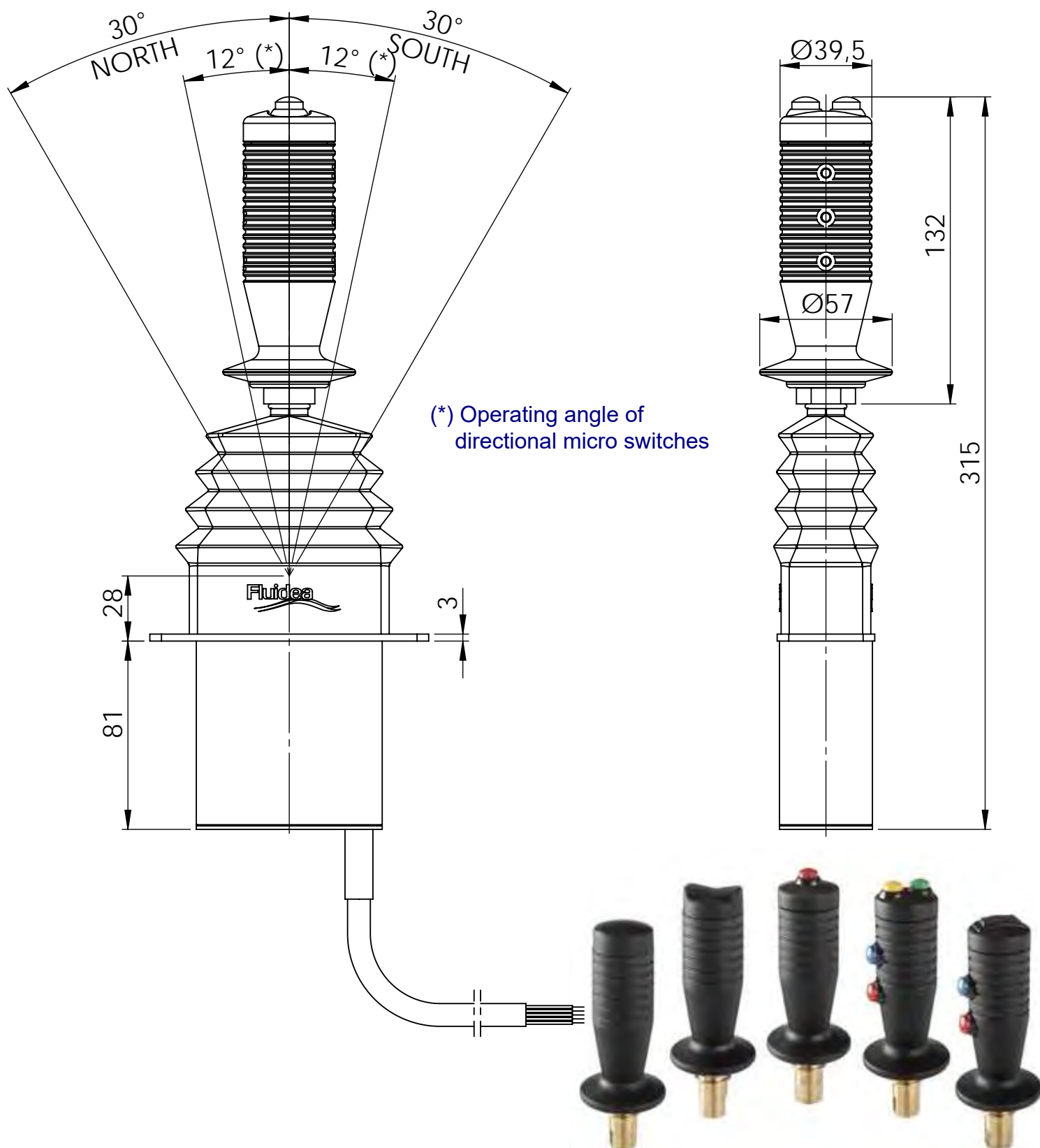
### Overall dimensions

Single axis remote control with IP1 knob handle



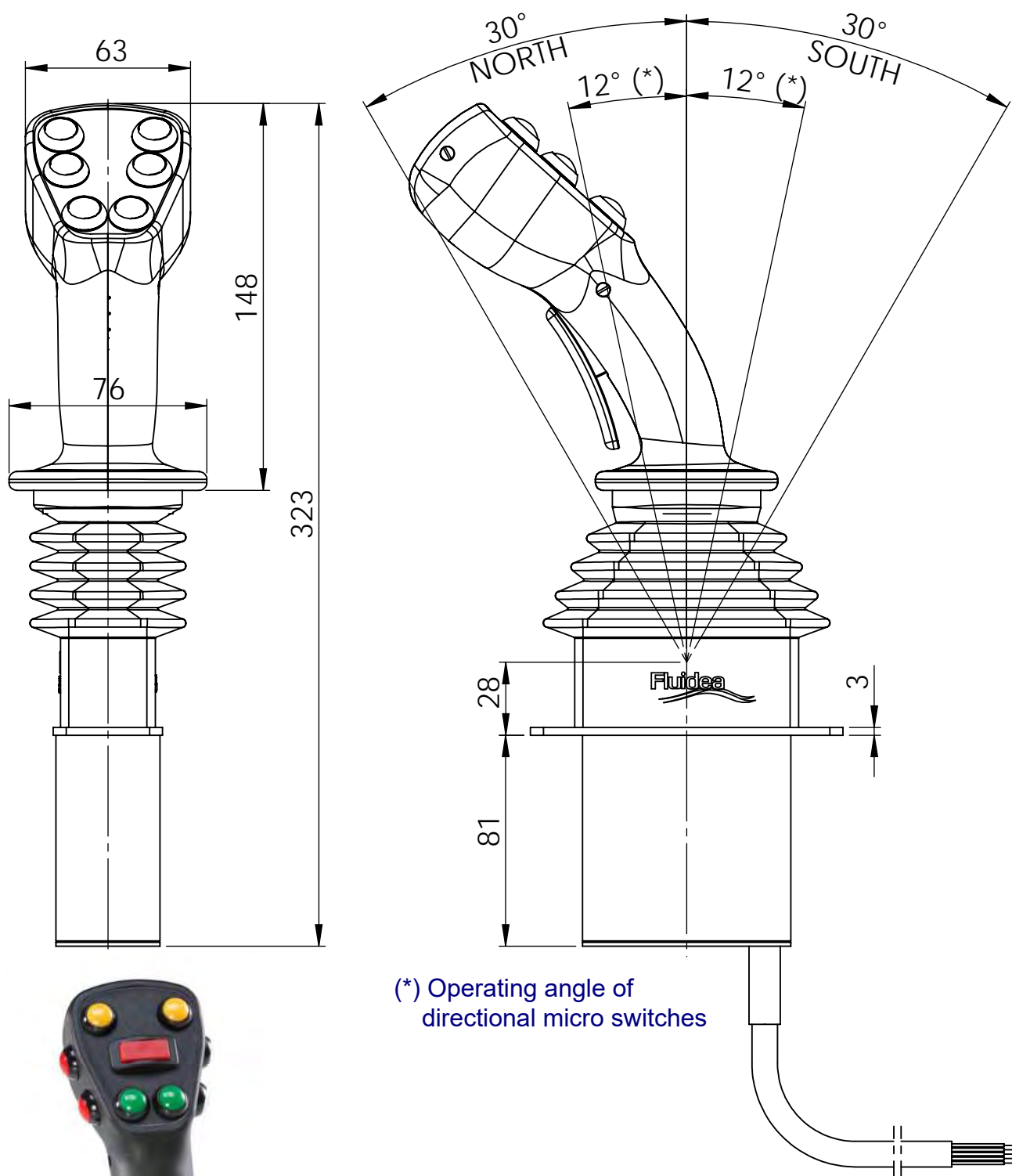
### Overall dimensions:

Single axis remote control with IC2 multifunction handle



### Overall dimensions

Single axis remote control with IE2 multifunction grip

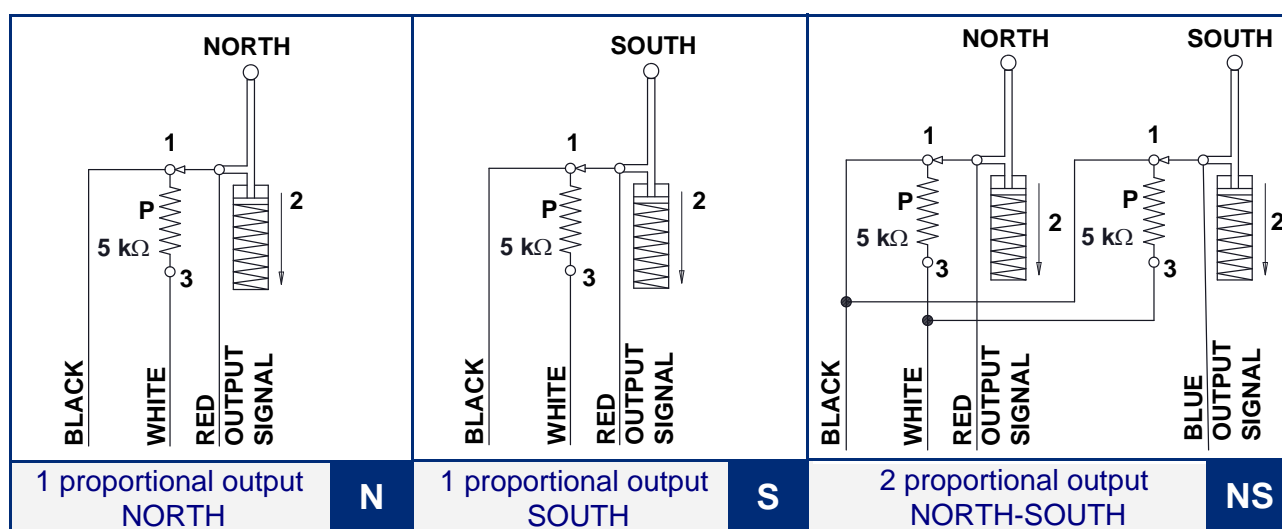


### Electric diagram configuration

#### Proportional output configuration

Without potentiometer

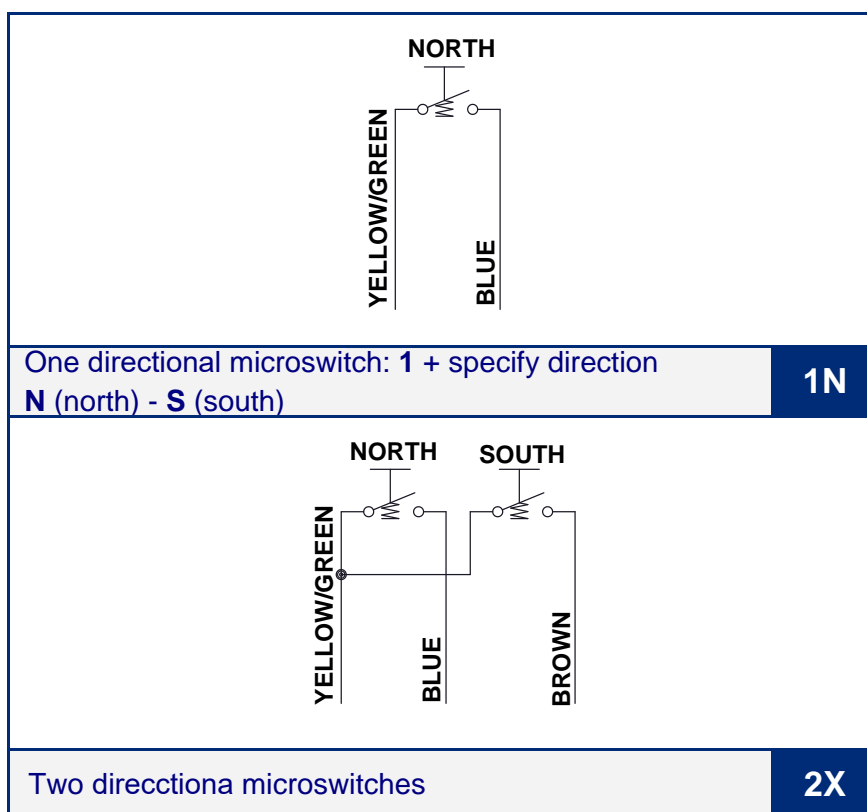
00



#### Directional ON-OFF microswitches configuration

Without microswitch

00



### Control handles

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

Without handle

Z

Knob handle

IP1



Multifunctional ergonomic

IE2



Standard cylindrical handle

IC1



Multifunctional cylindrical handle

IC2





### Rubber boot

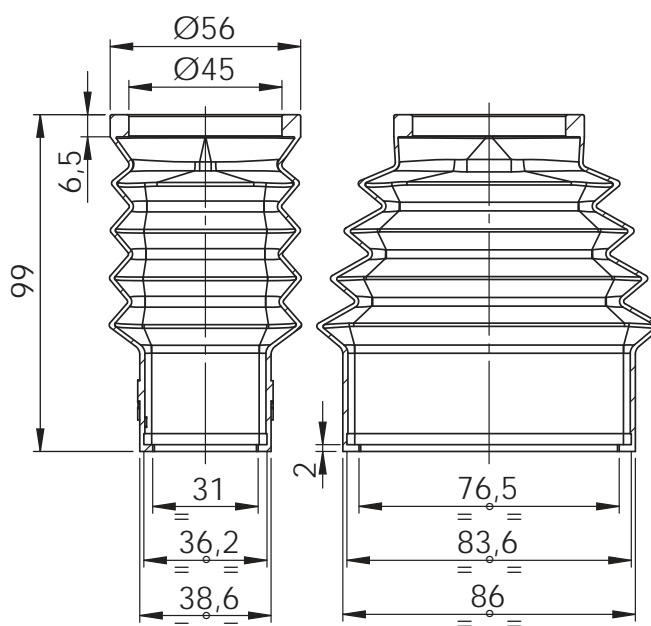
Without rubber boot

Z

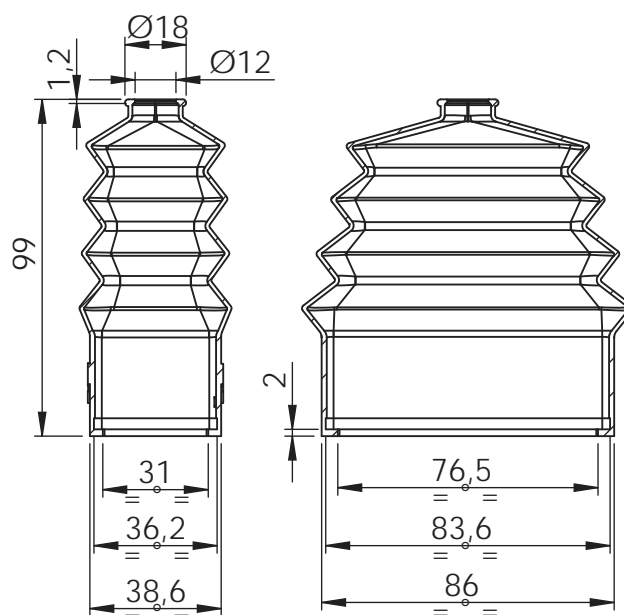
With rectangular rubber boot

R

For IE2 ergo grip



For IP1, IC1-IC2 handle's options



## Ordering key

JEOP	1	F	2X	NS	IE20001	R
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### Rubber boot (page 11):

- without boot = **Z**
- with rectangular boot = **R**

### Handle (page 10):

- **IE20001** = handle part number, assigned by FLUIDEA (for the available options refer to technical catalogue of the handle)
- **Z** = without handle

### Proportional output configuration (page 9):

- **00** = without potentiometers (On-off JEOM configuration)
- **N** = 1 proportional output NORTH
- **S** = 1 proportional output SOUTH
- **NS** = 2 proportional output NORTH-SOUTH

### On-off microswitch configuration (page 9):

- **00** = without micro
- **1(N)** = One out of centre microswitch:  
1 + specify direction **N** (north) - **S** (south)
- **2X** = Two out of centre microswitches or ON-OFF configuration

### Control device configuration

- **F** = With lever detented in any position  
(omit if the remote control is spring centered in) neutral position)

### Model:

- **1** = standard

### Basic model:

- **JEOPM** = Single axis proportional remote control

## THE COMPREHENSIVE RANGE OF MANUFACTURED AND MARKETING 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
- Heat exchangers and cooling systems
- Fluid monitoring & diagnostic instruments
- Bell housings, driving flanges & elastic couplings



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