

# HERCULES

## Joystick



New joystick, completely renewed and specifically designed for harsh environments and situations. Materials, technical solutions and sizing of critical components guarantee reliability and sturdiness, mechanical resistance and long life, while special attention is paid to design, ergonomics, operation accuracy and sensitivity.

### FEATURES

- Fiberglass nylon structural components and steel levers ensure maximum resistance.
- Mechanical life of switches: 5 million operations.
- IP protection degree: Hercules is classified IP00 or IP65, when housed in a specific enclosure.
- Extreme temperature resistance: -25°C to +70°C.

### OPTIONS

- Available with up to 5 speeds for each direction.
- Stepped or linear operations with spring return.
- Cross or 360° movement.
- 3 different versions: with free movement, with dead man safety device (with mechanical interlock with or without NO/NC contact), or with NO pushbutton to be used as electrical interlock.
- 4 different handles, also available with pushbuttons and selector switches.
- Available with potentiometers.

- Available with single or redundant analogue encoders with current or voltage output.

### HERCULES-S

- Hercules-S is equipped with boards with 8 or 12 microswitches with 1NC contacts and switch for electrical interlock.

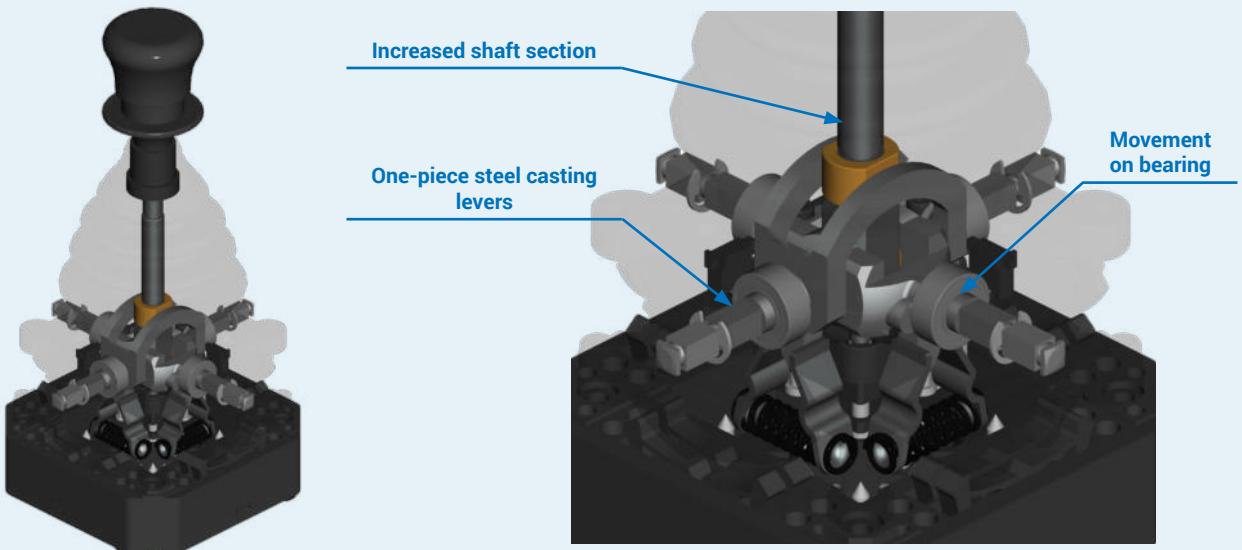
### HERCULES-CK

- Hercules-CK is a joystick specially designed for controlling industrial handling machines and it features switches with electrical capacity of 3A / 250 Vac.

### CERTIFICATIONS

- CE marking.

*Fill in the "request form" for accurate product configuration.*



## POSSIBLE ASSEMBLIES

Hercules-S



Hercules-CK



Stepless proportional version



## CERTIFICATIONS

### Conformity to Community Directives

2014/35/UE Low Voltage Directive

2006/42/CE Machinery Directive

### Conformity to CE Standards

EN 60204-1 Safety of machinery - Electrical equipment of machines

EN 60947-1 Low-voltage switchgear and controlgear

EN 60947-5-1 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electromechanical control circuit devices

### Markings and homologations

CE

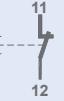
## GENERAL TECHNICAL SPECIFICATIONS

Ambient temperature	Storage -40°C/+70°C Operational -25°C/+70°C
IP protection degree	IP 00 (IP 65 max. when housed in a specific enclosure)
Insulation category	Class I
Operating positions	Any position
Mechanical life	5x10 <sup>6</sup> operations

## HERCULES-S - TECHNICAL SPECIFICATIONS OF THE MICROSWITCHES

Code	PRVV0804PE
Utilisation category	AC 15
Operating electrical usages	Inductive load 48 Vac/1 A 125 Vac/1 A 250 Vac/0,5 A 30 Vdc/1 A
	Resistive load 48 Vac/2 A 125 Vac/3 A 250 Vac/2 A 30 Vdc/3 A
Rated thermal current	8 A
Rated insulation voltage	1000 Vac
Mechanical life	5x10 <sup>6</sup> operations
Connections	Screw-type terminals
Wires	0.2 mm <sup>2</sup> - 2.5 mm <sup>2</sup>
Tightening torque	0.5 Nm - 0.6 Nm
Microswitch type	Single break
Contacts	1NC
Scheme	
Markings and homologations	   

## HERCULES-CK - TECHNICAL SPECIFICATIONS OF THE SWITCHES

Code	PRSL0190XX	PRSL0191XX	PRSL1000PI	PRSL1001PI
Use	Hercules-CK		"Dead – man" safety device	
Utilisation category		AC 15		
Rated operational current		3 A		
Rated operational voltage		250 Vac		
Rated thermal current		10 A		
Rated insulation voltage	300 Vac		500 Vac	
Connections		Screw-type terminals		
Wires	(2x0.5mm <sup>2</sup> - 2x1.5 mm <sup>2</sup> - 1x2.5 mm <sup>2</sup> ) (UL - (c)UL: use 60°C or 75°C copper (CU) conductor and wire 14-22 AWG)		(1x2.5 mm <sup>2</sup> , 2x1.5 mm <sup>2</sup> ) (UL - (c)UL: use 60°C or 75°C copper (CU) conductor and wire 16-18 AWG)	
Tightening torque	0.5 Nm		0.6 Nm	
Switch type		Double break, slow action		
Contacts	1NC + 1NC		1NO	1NC
Scheme				
Markings and homologations			  	

## TECHNICAL SPECIFICATIONS OF THE BUTTONS

Code	PRVV5019PE	PRVV5020PE	PRVV5080PE
Color	Green	Black	Green
Contact current rating	Resistive load 32 Vac/400 mA Resistive load 50 Vdc/100 mA Resistive load 125 Vac/125 mA		Resistive load 28 Vdc/5 A Resistive load 125 Vac/125 mA
Contact resistance	50 mΩ		-
Mechanical life	1x10 <sup>6</sup> operations		1x10 <sup>6</sup> operations
Contacts	1NO		1NO
Markings and homologations	CE		CE

## TECHNICAL SPECIFICATIONS OF THE POTENTIOMETERS

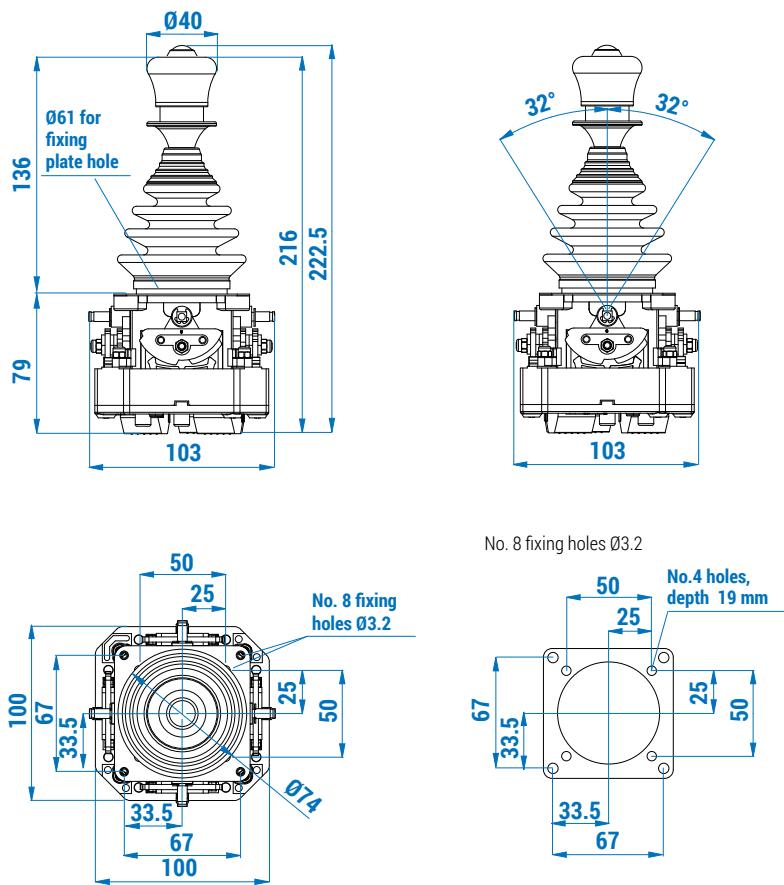
Code	PRVV9020PE	PRVV9025PE	PRVV9035PE
Ohmic value	4,7 kΩ	10 kΩ	2,2 kΩ
Independent linearity (over AEA -3°)		±0,25%	
Life time		3x10 <sup>6</sup> movements	
Operational ambient temperature		-55°C/+125°C	
Mechanical angle		360° continuous	
Actual Electrical Angle (AEA)		355°±5°	
Ohmic value tolerance		±5%	
Temperature drift		< 50 PPM/°C	
Dissipation		4 W	

## TECHNICAL SPECIFICATIONS OF THE ANALOGUE ENCODERS EGON-AL

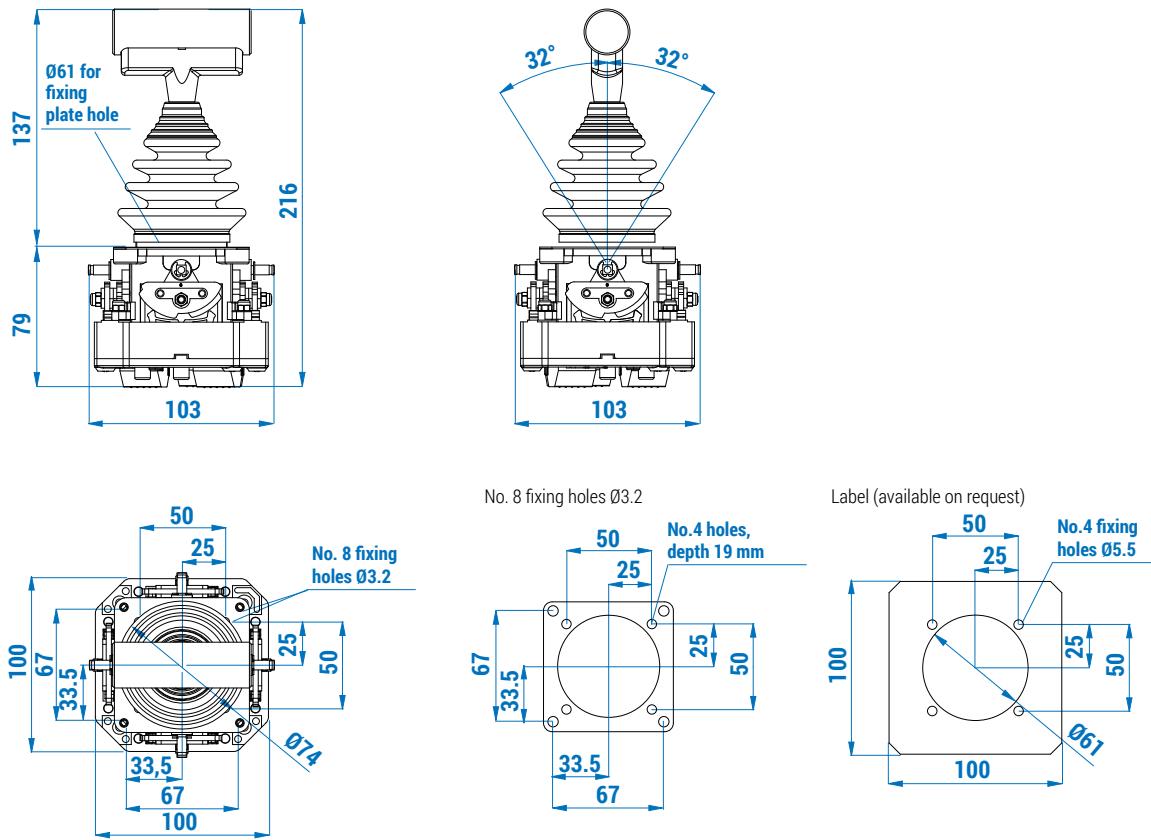
Power supply	9 ÷ 30 Vdc
	Analogue current output 4 - 20 mA
Output	Analogue voltage output 1 ÷ 5 Vdc
	Analogue voltage output 2 ÷ 10 Vdc
Power consumption	35 mA
Single turn resolution	12 bit (4096 points per revolution)
Input over-current protection	Yes
Input and output over-voltage protection	Yes
Accuracy	+/- 0,35°
Linearity	+/- 0,25°
Redundancy	2 offset analogue outputs

## HERCULES-S - OVERALL DIMENSIONS (mm)

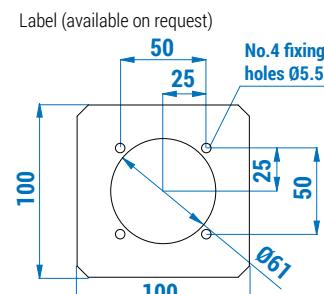
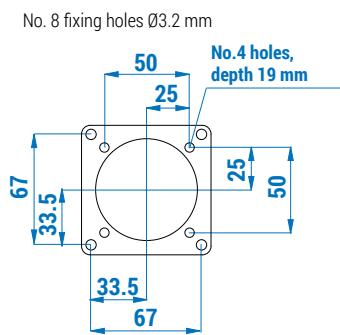
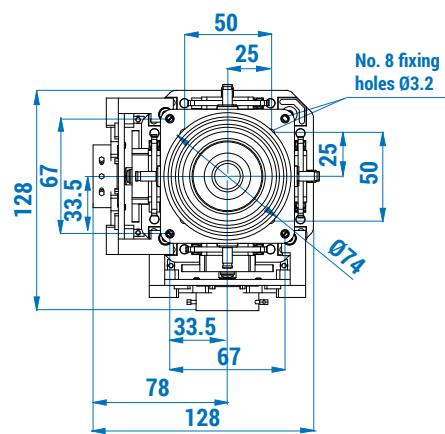
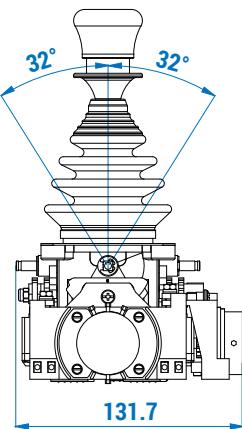
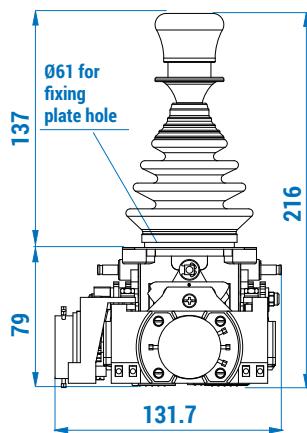
## With knob



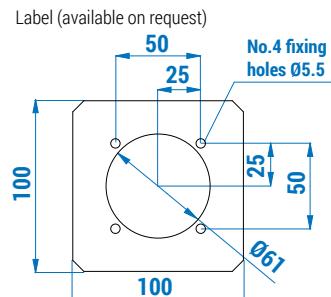
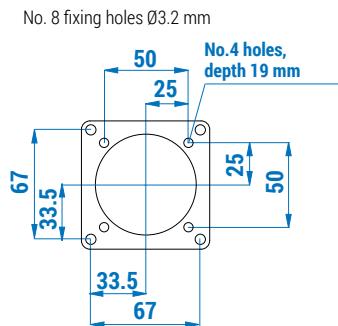
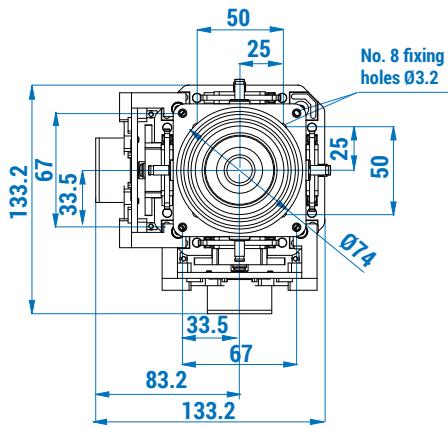
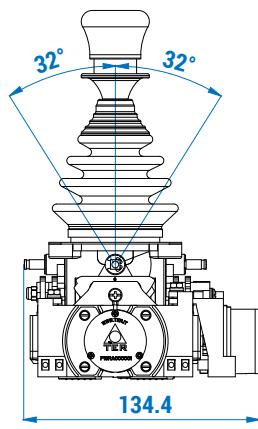
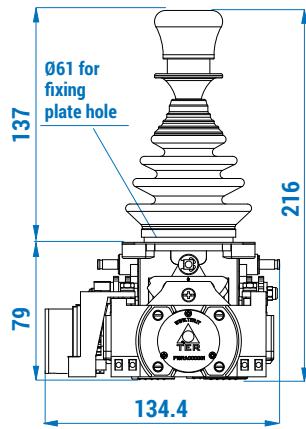
## With T handle



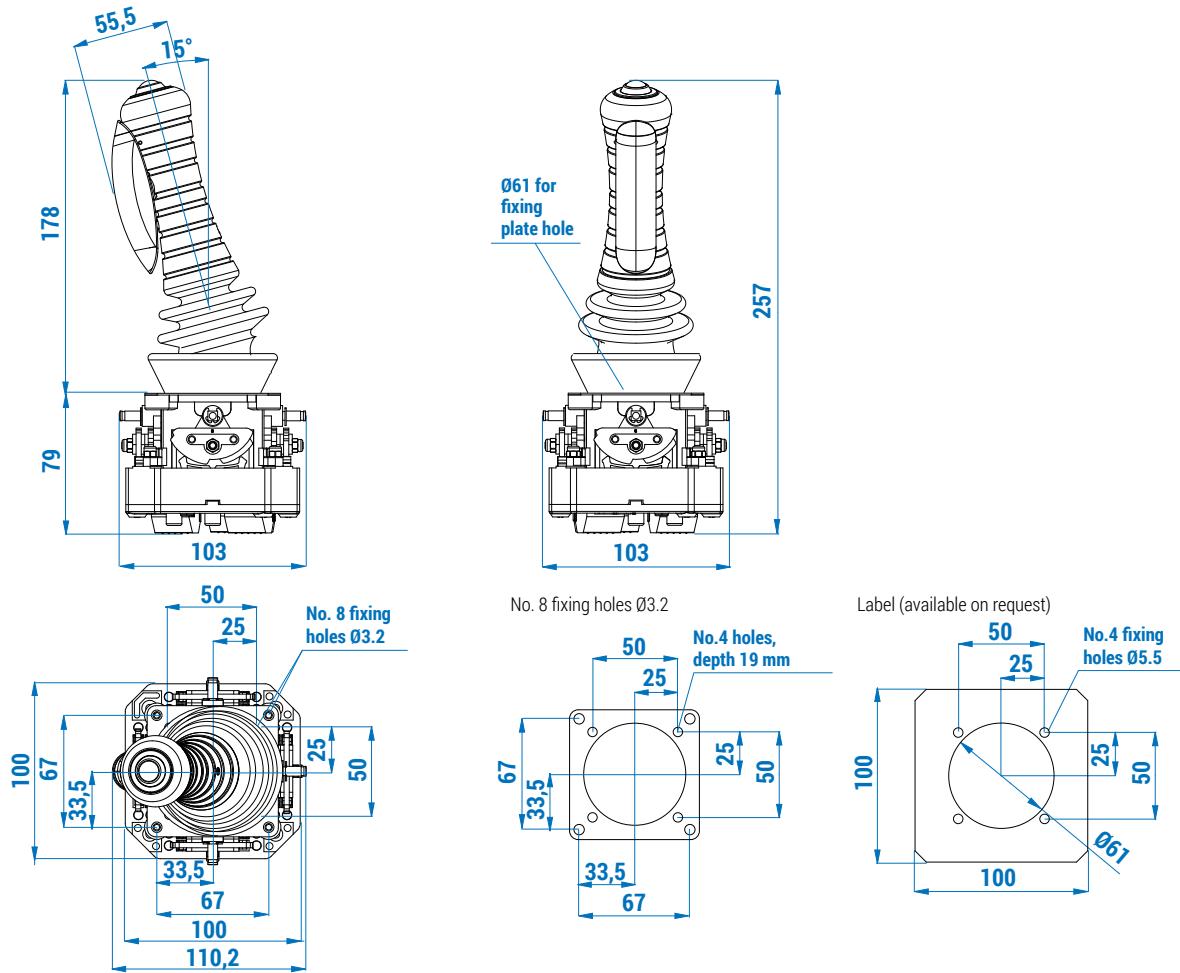
## With potentiometer



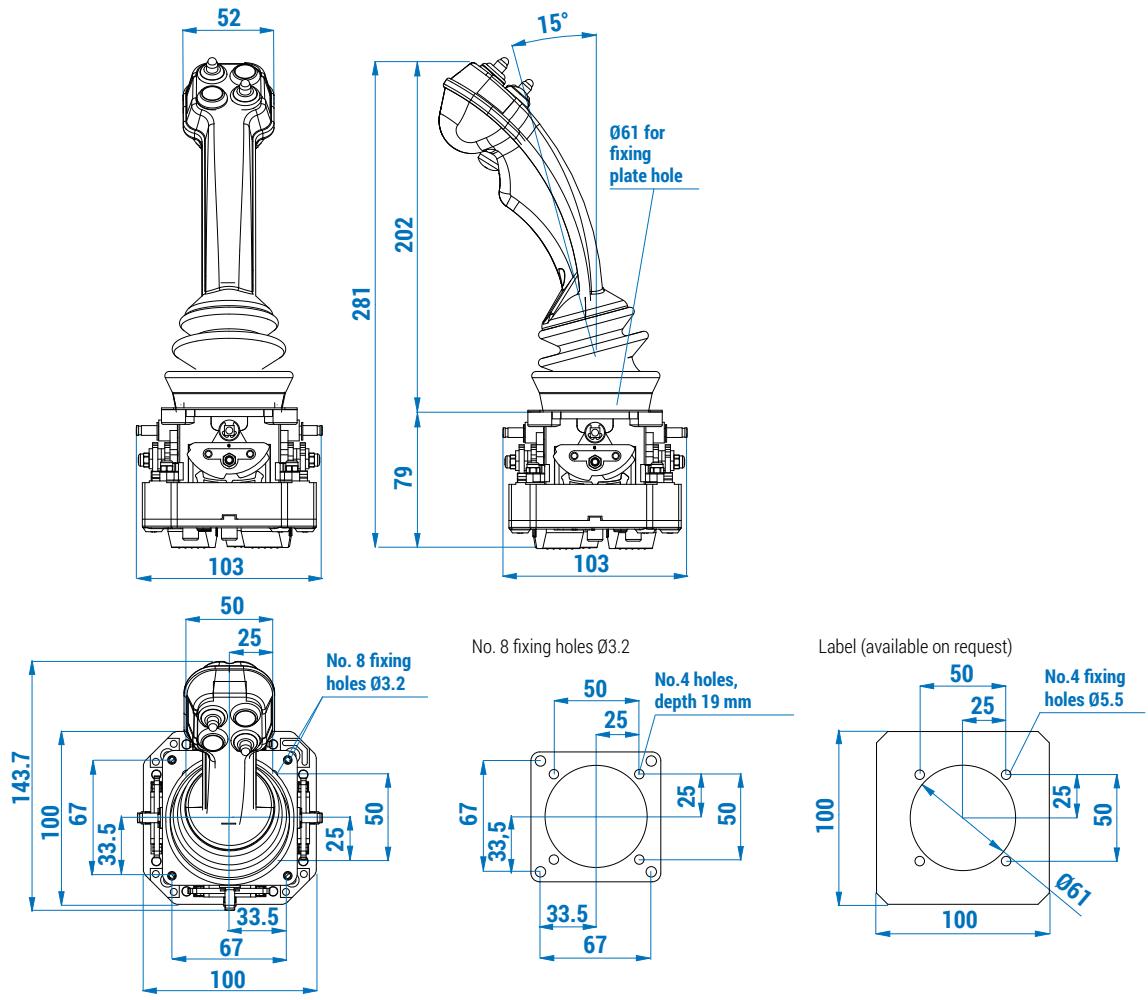
## With Egon-AL encoder



## With handle



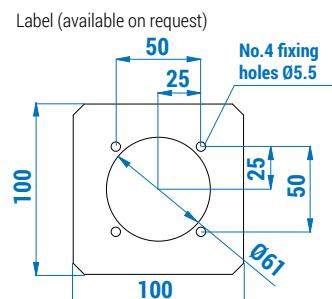
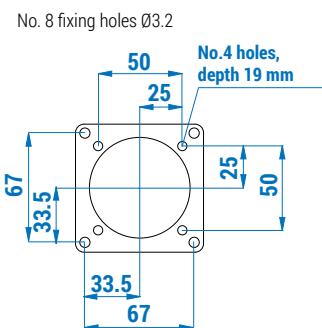
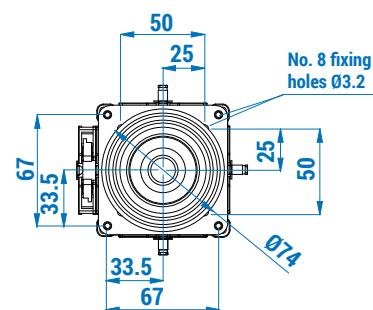
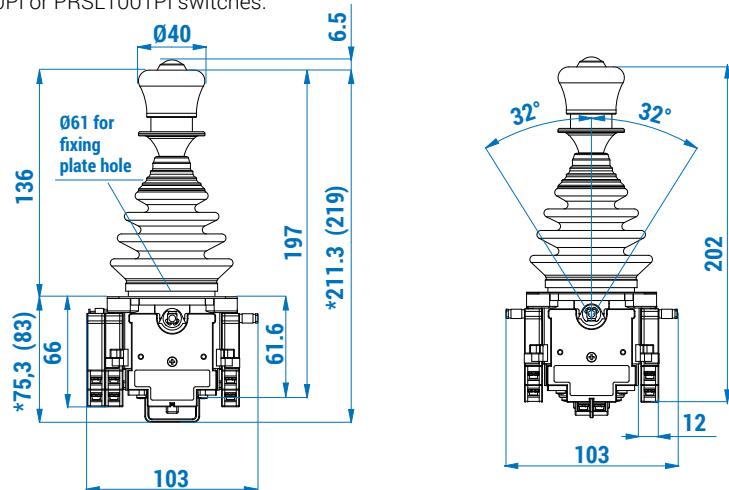
## With ergonomic handle



## HERCULES-CK - OVERALL DIMENSIONS (mm)

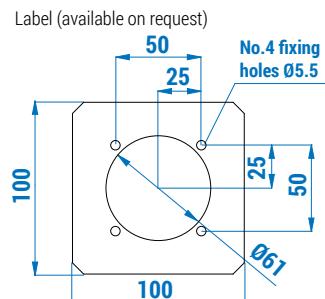
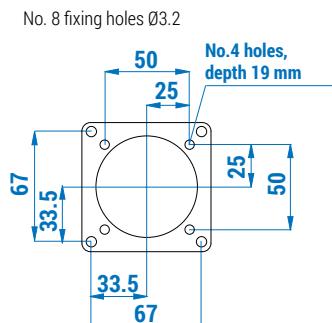
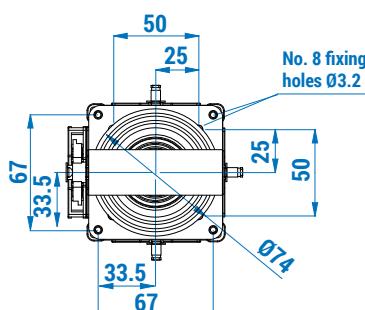
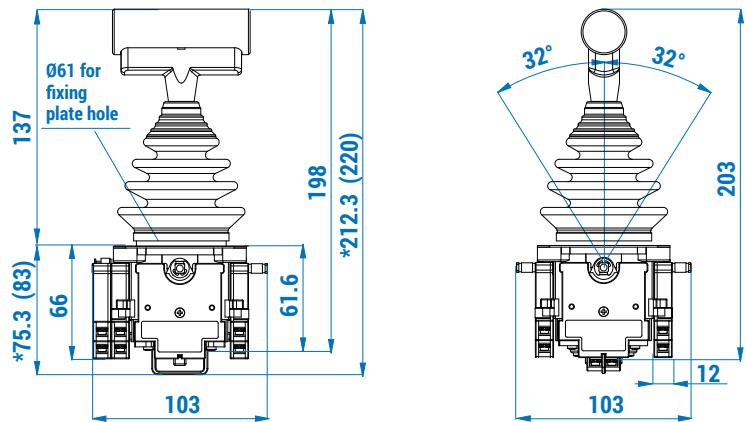
### With knob

\* PRSL0191XX switches  
 () PRSL1000PI or PRSL1001PI switches.

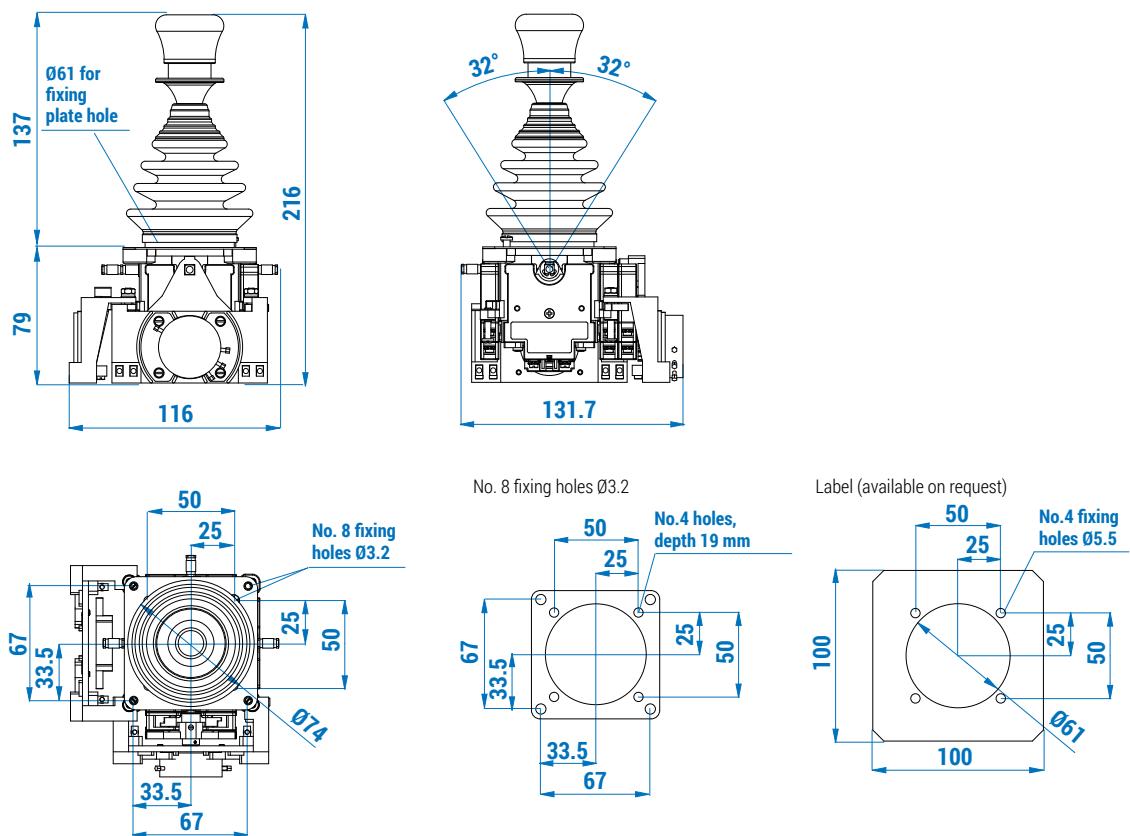


### With T handle

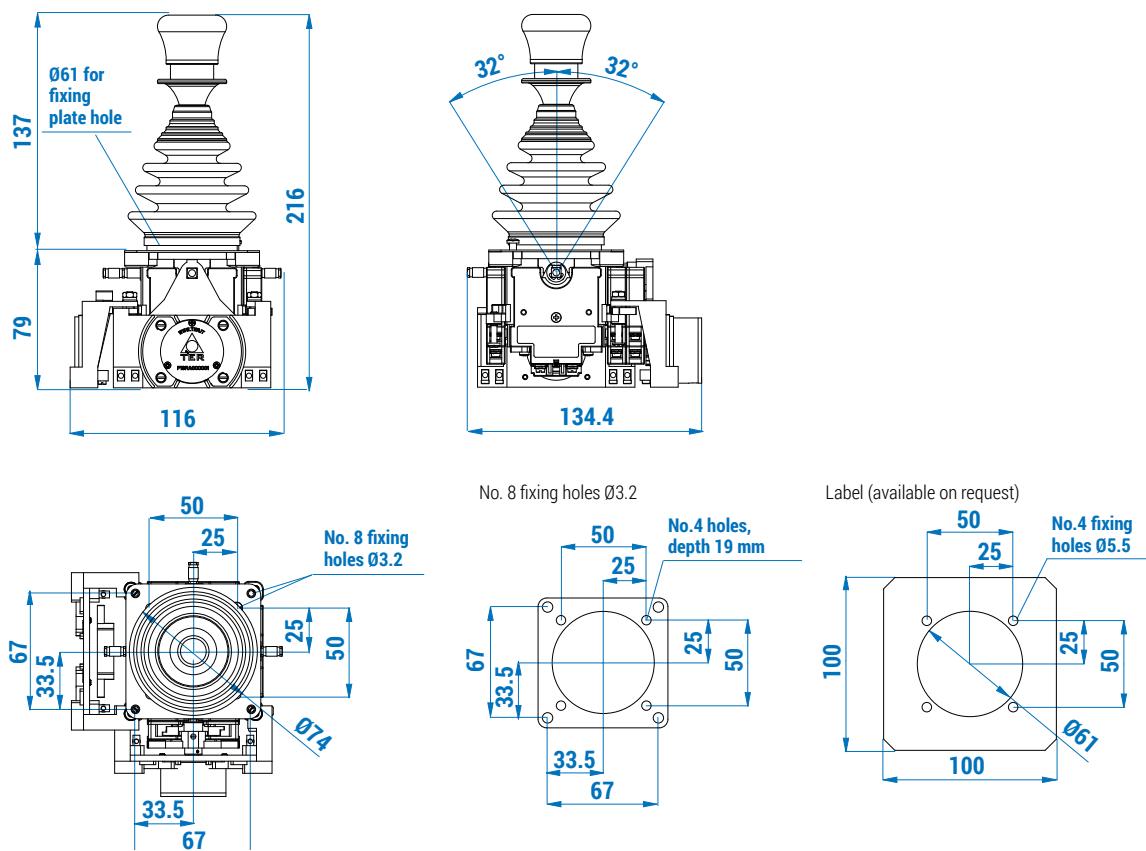
\* PRSL0191XX switches  
 () PRSL1000PI or PRSL1001PI switches.



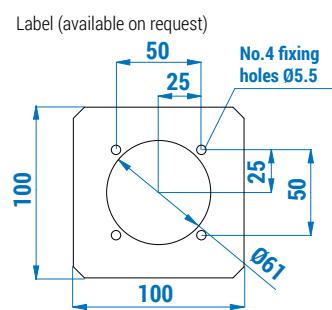
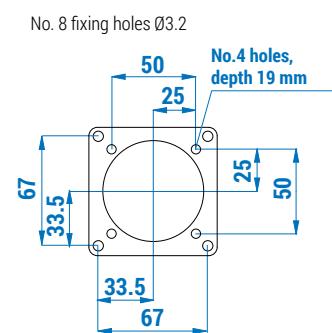
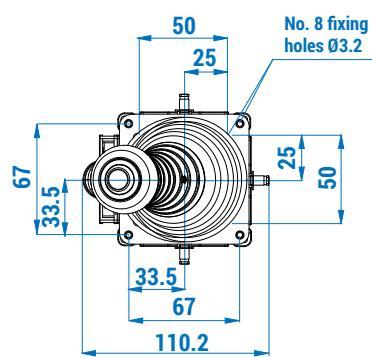
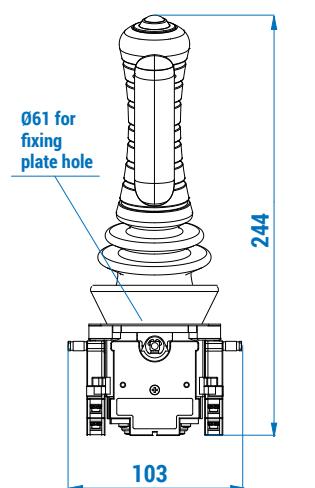
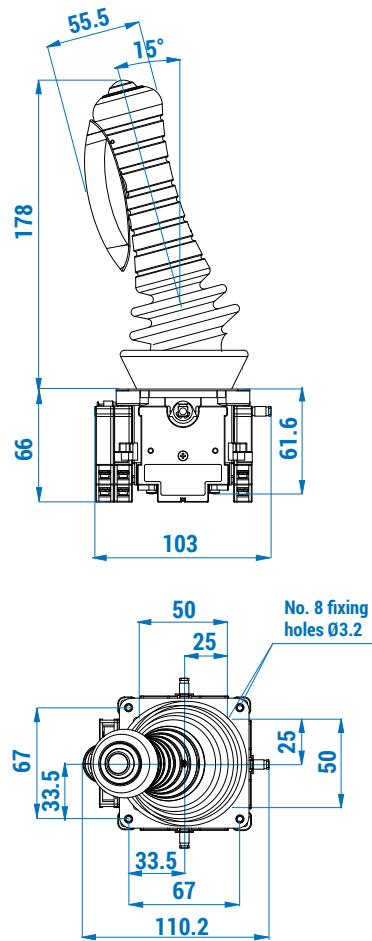
## With potentiometer



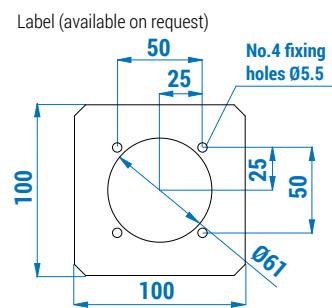
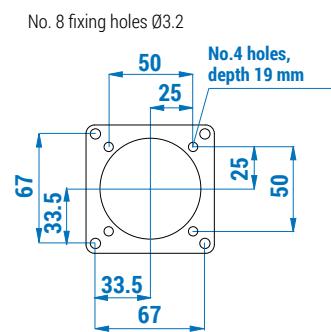
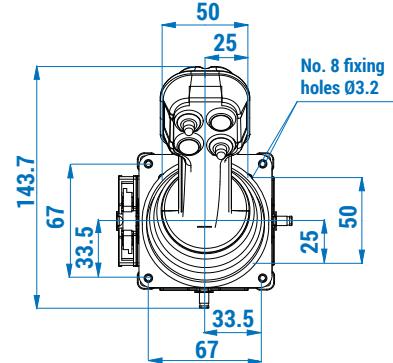
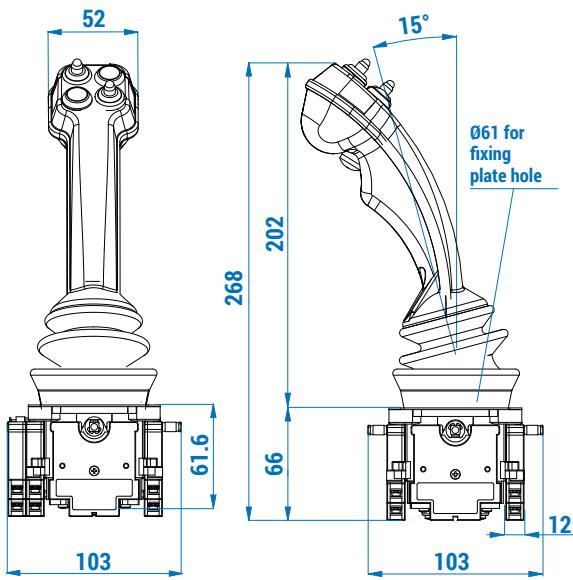
## With Egon-AL encoder



## With simple handle



## With ergonomic handle

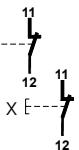


## STANDARD JOYSTICKS

All standard joysticks feature spring return stepped movement.

Hercules-S joysticks are equipped with 1NC microswitches PRVV0804PE and fixed terminal board.

Hercules-CK joysticks are equipped with 1NC+1NC switches PRSL0190XX 2 x



Grip type	Positions	Direction of movement		Hercules-S code		Hercules-CK code	
		360°	Cross	Free movement	Mechanical interlock + NC/NO contact	Free movement	Mechanical interlock + 2NC contact
Knob	1-0	X		F661CC01100001	F661AC01100001	/	/
	1-1	X		F661CL01111001	F661AL01111001	/	/
	2-0	X		F661CC02200001	F661AC02200001	F662CC02200001	F662AC02200001
	2-2	X		F661CL02222001	F661AL02222001	/	/
	3-0	X		F661CC03300001	F661AC03300001	/	/
	3-1	X		F661CL03311001	F661AL03311001	/	/
	3-2	X		F661CL03322001	F661AL03322001	/	/
	3-3	X		F661CL03333001	F661AL03333001	F662CL03333001	F662AL03333001
	4-0	X		F661CC04400001	F661AC04400001	/	/
	4-1	X		F661CL04411001	F661AL04411001	/	/
	4-2	X		F661CL04422001	F661AL04422001	/	/
	4-3	X		F661CL04433001	F661AL04433001	/	/
	4-4	X		F661CL04444001	F661AL04444001	F662CL04444001	F662AL04444001
	5-0	X		F661CC05500001	F661AC05500001	/	/
	5-1	X		F661CL05511001	F661AL05511001	F662CL05511001	F662AL05511001
	5-2	X		F661CL05522001	F661AL05522001	/	/
	5-3	X		F661CL05533001	F661AL05533001	/	/
	5-4	X		F661CL05544001	F661AL05544001	/	/
	5-5	X		F661CL05555001	F661AL05555001	F662CL05555001	F662AL05555001

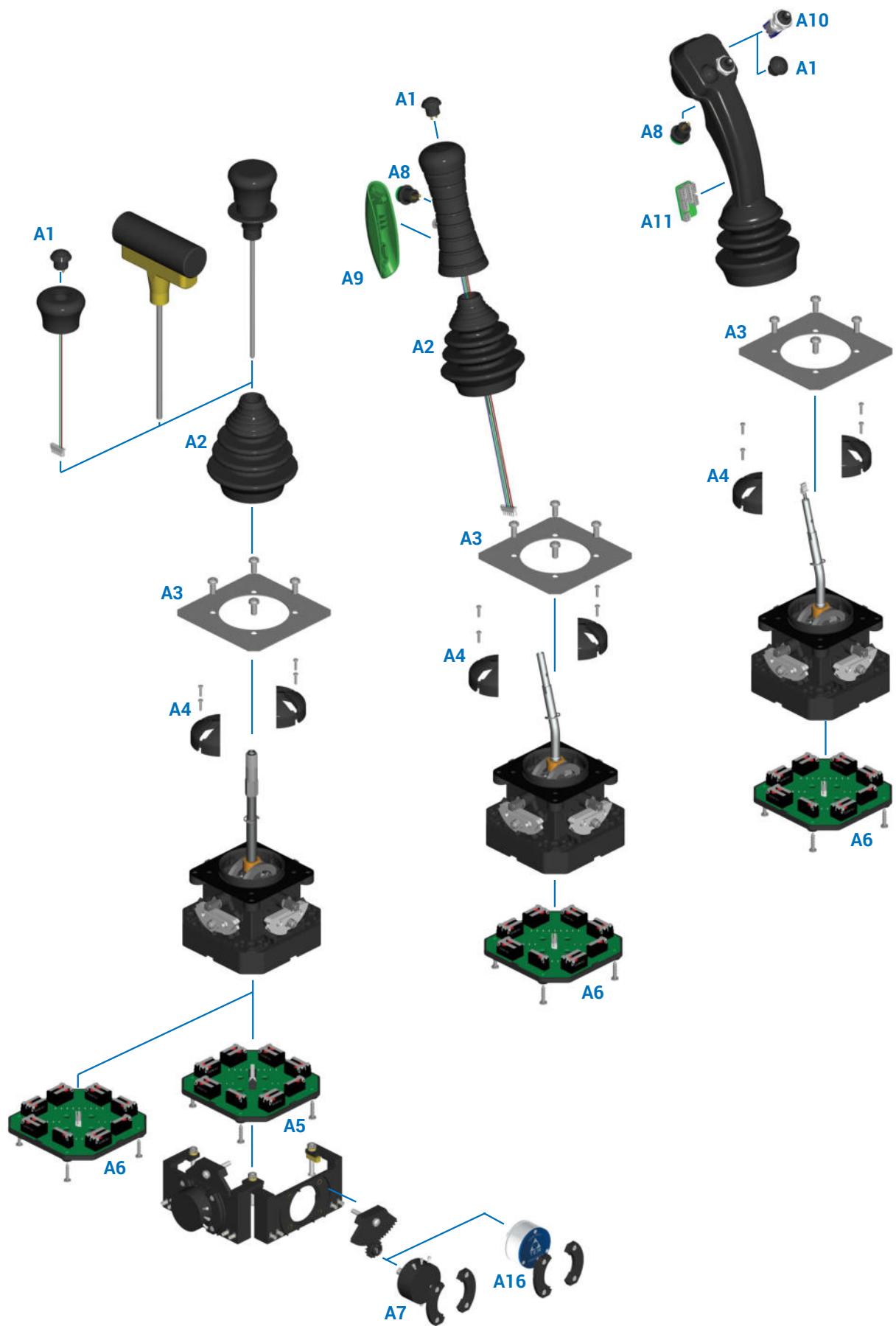
Grip type	Positions	Direction of movement		Hercules-S code		Hercules-CK code	
		360°	Cross	1NO button	1NO button	1NO button	1NO button
Knob with button							
	4-4		X		F661BC04444001		F662BC04444001

Grip type	Positions	Direction of movement		Hercules-S code		Hercules-CK code	
		360°	Cross	Free movement	Mechanical interlock + NC/NO contact	Free movement	Mechanical interlock + 2NC contact
T handle	2-0	X		F661MC02200001	F661MC02200001	F662MC02200001	F662MC02200001
	3-3	X		F661ML03333001	F661ML03333001	F662ML03333001	F662ML03333001
	4-4	X		F661ML04444001	F661ML04444001	F662ML04444001	F662ML04444001
	5-1	X		F661ML05511001	F661ML05511001	F662ML05511001	F662ML05511001
	5-5	X		F661ML05555001	F661ML05555001	F662ML05555001	F662ML05555001

Grip type	Positions	Direction of movement		Hercules-S code		Hercules-CK code	
		360°	Cross	Free movement	1NO button (for use as electrical interlock)	Free movement	1NO button (for use as electrical interlock)
Simple handle	1-0		X	F661GC01100001	F661EC01100001	/	/
	1-1	X		F661GL01111001	F661EL01111001	/	/
	2-0		X	F661GC02200001	F661EC02200001	F662GC02200001	F662EC02200001
	2-2	X		F661GL02222001	F661EL02222001	/	/
	3-0		X	F661GC03300001	F661EC03300001	/	/
	3-1	X		F661GL03311001	F661EL03311001	/	/
	3-2	X		F661GL03322001	F661EL03322001	/	/
	3-3	X		F661GL03333001	F661EL03333001	F662GL03333001	F662EL03333001
	4-0		X	F661GC04400001	F661EC04400001	/	/
	4-1	X		F661GL04411001	F661EL04411001	/	/
	4-2	X		F661GL04422001	F661EL04422001	/	/
	4-3	X		F661GL04433001	F661EL04433001	/	/
	4-4	X		F661GL04444001	F661EL04444001	F662GL04444001	F662EL04444001
	5-0		X	F661GC05500001	F661EC05500001	/	/
Ergonomic handle	5-1	X		F661GL05511001	F661EL05511001	F662GL05511001	F662EL05511001
	5-2	X		F661GL05522001	F661EL05522001	/	/
	5-3	X		F661GL05533001	F661EL05533001	/	/
	5-4	X		F661GL05544001	F661EL05544001	/	/
	5-5	X		F661GL05555001	F661EL05555001	F662GL05555001	F662EL05555001
	1-0		X	F661LC01100001	F661LC01100002	/	/
	1-1	X		F661LL01111001	F661LL01111002	/	/
	2-0		X	F661LC02200001	F661LC02200002	F662LC02200001	F662LC02200002
	2-2	X		F661LL02222001	F661LL02222002	/	/
	3-0		X	F661LC03300001	F661LC03300002	/	/
	3-1	X		F661LL03311001	F661LL03311002	/	/
	3-2	X		F661LL03322001	F661LL03322002	/	/
	3-3	X		F661LL03333008	F661LL03333009	F662LL03333002	F662LL03333003
	4-0		X	F661LC04400001	F661LC04400002	/	/
	4-1	X		F661LL04411001	F661LL04411002	/	/
	4-2	X		F661LL04422001	F661LL04422002	/	/
	4-3	X		F661LL04433001	F661LL04433002	/	/
	4-4	X		F661LL04444001	F661LL04444002	F662LL04444002	F662LL04444001
	5-0		X	F661LC05500001	F661LC05500002	/	/
	5-1	X		F661LL05511004	F661LL05511005	F662LL05511002	F662LL05511003
	5-2	X		F661LL05522001	F661LL05522002	/	/
	5-3	X		F661LL05533001	F661LL05533002	/	/
	5-4	X		F661LL05544002	F661LL05544001	/	/
	5-5	X		F661LL05555001	F661LL05555002	F662LL05555002	F662LL05555003

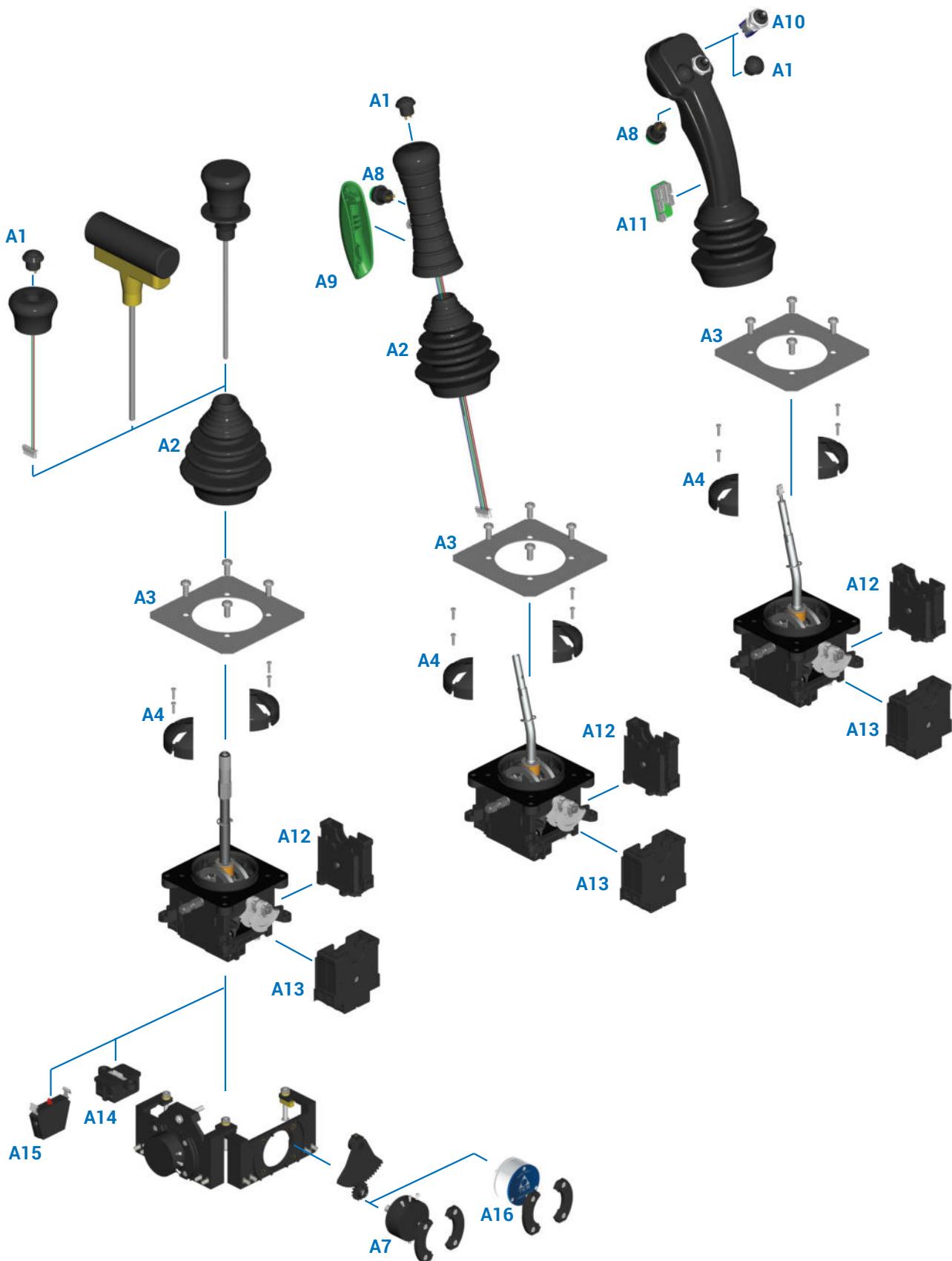


## HERCULES-S - ASSEMBLY DRAWING



Refer to the following tables for descriptions of components: "Buttons", "Switch boards", "Potentiometers and encoders", "Selector switches", "Lever guides" and "Accessories".

## HERCULES-CK - ASSEMBLY DRAWING



Refer to the following tables for descriptions of components: "Switches", "Buttons", "Switch boards", "Potentiometers and encoders", "Selector switches", "Lever guides" and "Accessories".

## COMPONENTS

### Switches

Ref.	Drawing	Description	Scheme	Code
A12		N. 1 switch PRSL0190XX with holding plate, nut and screw.	2 x E--- 11 12	PRSL4540PI
A13		N. 2 switches PRSL0190XX with holding plate, nut and screw.	2 x E--- 11 12      2 x E--- 11 12	PRSL4541PI
A14		1NC + 1NC switch	2 x E--- 11 12	PRSL0191XX
A15		1 NO switch	E--- 13 14	PRSL1000PI
		1 NC switch	E--- 11 12	PRSL1001PI

### Buttons

Ref.	Drawing	Description	Code
A1		Green 1NO button	PRVV5019PE
		Black 1NO button	PRVV5020PE
A8		Green 1NO button	PRVV5080PE
A9		Trigger button	PRSL7595PI

### Switch boards

Ref.	Drawing	Description	Code
A5		5 speed board, 12 microswitches + electrical interlock	93625
		3 speed board, 8 microswitches + electrical interlock	93621
A6		5 speed board, 12 microswitches	93626
A11		Board for ergonomic handle	93624

### Potentiometers and encoders

Ref.	Drawing	Description	Code
A7		Potentiometer 2,2 kΩ	PRVV9035PE
		Potentiometer 4,7 kΩ	PRVV9020PE
		Potentiometer 10 kΩ	PRVV9025PE
A16		Single analogue encoder Egon-AL	F19SA000001
		Redundant analogue encoder Egon-AL	F19RA000001

## Selector switches

Ref.	Drawing	Description	Code
A10		2 maintained position selector switch ON-ON wired	PRVV0830PE
		3 maintained position selector switch ON-OFF-ON wired	PRVV0831PE
		2 position spring return selector switch ON-MOM wire	PRVV0832PE
		3 position selector switch MOM-OFF-MOM wired	PRVV0833PE
		3 position selector switch ON-OFF-MOM wired	PRVV0834PE
		2 maintained position selector switch ON-OFF wired	PRVV0840PE
		2 position selector switch MOM-OFF wired	PRVV0842PE

## Lever guides - Hercules 3 speeds

*Other lever guides available on request.*

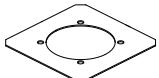
Ref.	Drawing	Description	Code
A4		Cross lever guide 3/3	PRHC5555PE
		Cross lever guide 2/2	PRHC3333PE
		Cross lever guide 1/1	PRHC1111PE

## Lever guides - Hercules 5 speeds

*Other lever guides available on request.*

Ref.	Drawing	Description	Code
A4		Cross lever guide 5/5	PRHC5555PE
		Cross lever guide 4/4	PRHC4444PE
		Cross lever guide 3/3	PRHC3333PE
		Cross lever guide 2/2	PRHC2222PE
		Cross lever guide 1/1	PRHC1111PE

## Accessories

Ref.	Drawing	Description	Code
A2		Bellows	PRGU6050PE
A3		Blank label	PRTA0150PE
		Lifting-Traverse label	PRTA0151PE
		Trolley-Rotation label	PRTA0152PE

## HERCULES-S - REQUEST FORM FOR NON STANDARD JOYSTICK

### Grip

Knob (IP 65 assembled in specific enclosure)



Function

Free movement

Mechanical interlock + NC/NO contact

P1 1NO button

Colour of button

black

green

T handle (IP 65 assembled in specific enclosure)

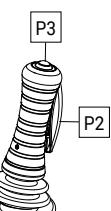


Function

Free movement

Mechanical interlock + NC/NO contact

Handle (IP 44 assembled in specific enclosure)



Function

Free movement

P2 1NO button

P2 1NO button + P3 1NO button

Colour of button

black

green

Ergonomic handle (IP43 assembled in specific enclosure)



1NO buttons can be used as electrical interlock.

### Movement

Stepped - spring return

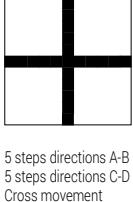
Linear - spring return

### Lever guide

Standard lever guide

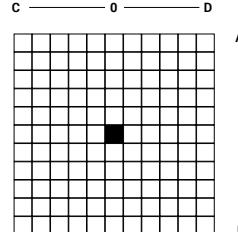


5 steps directions A-B  
5 steps directions C-D  
360° movement



5 steps directions A-B  
5 steps directions C-D  
Cross movement

Customized lever guide



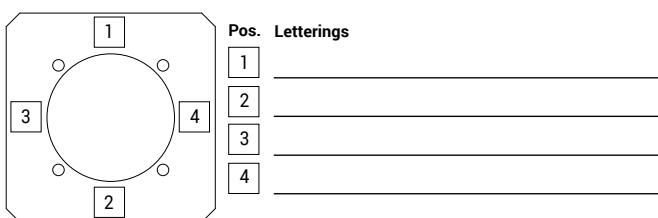
### Joystick label

Blank label

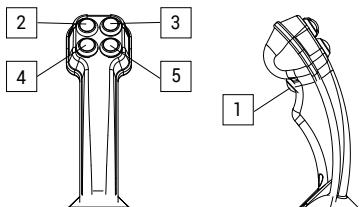
Lifting-Traverse symbols

Trolley-Rotation symbols

Customized label



### Actuators for ergonomic handle



### Actuators for positions 2-3-4-5

A PRVV5019PE Green button 1NO contact + 1 common

B PRVV5020PE Black button 1NO contact + 1 common

C PRVV0840PE 2 position selector ON-OFF 1 contact + 1 common

D PRVV0842PE 2 position selector MOM-OFF 1 contact + 1 common

E PRVV0830PE 2 maintained position selector ON-ON 2 contacts + 1 common

F PRVV0831PE 3 maintained position selector ON-OFF-ON 2 contacts + 1 common

G PRVV0832PE 2 position spring return selector ON-MOM 2 contacts + 1 common

H PRVV0833PE 3 position selector MOM-OFF-MOM 2 contacts + 1 common

I PRVV0834PE 3 position selector ON-OFF-MOM 2 contacts + 1 common

### Actuator\* and label letterings

Pos.

1 Yes  No PRVV5080PE Green button 1NO contact + 1 common\*\*

Type Lettering

2	<input type="text"/>	_____
3	<input type="text"/>	_____
4	<input type="text"/>	_____
5	<input type="text"/>	_____

\* Maximum 5 contacts + 1 common available.

Ex: 1NO contact in position 1 + 4 buttons A type.

1NO contact in position 1 + 4 selectors C type.

1NO contact in position 1 + 2 selectors G type.

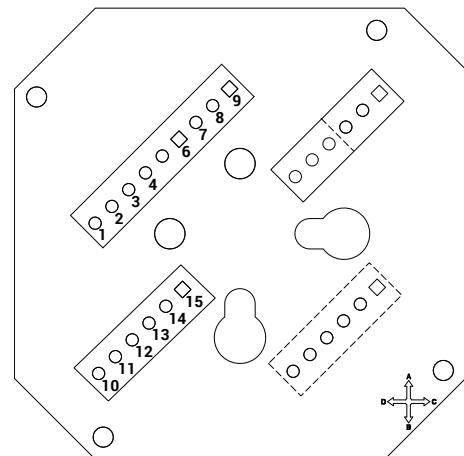
\*\* In case of use of the electrical interlock function, connect it to the actuator in Position 1.

### Contact scheme for Hercules-S with up to 3 speeds/positions

Standard version 3 - 3 speeds/positions

		Contact number			
		1	2	3	4
Speed / Position	Direction	A			
		B			
3					
2					
1					
0					
1					
2					
3					

		Speed / Position					
		Direction C ← → D					
Contact number	3	2	1	0	1	2	3
	6						
7							
8							
9							



#### Instructions

If a customized version is required, fill in the contact form for the two directions A-B C-D. Blacken the boxes corresponding to the contacts that must be associated with the movement of the joystick.

Customized version

		Contact number						
		1	2	3	4	10	11	12
Speed / Position	Direction	A						
		B						
3								
2								
1								
0								
1								
2								
3								
4								
5								

		Speed / Position					
		Direction C ← → D					
Contact number	3	2	1	0	1	2	3
	6						
7							
8							
9							
13							
14							
15							

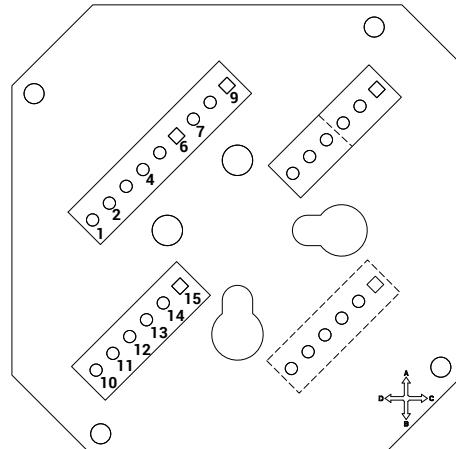
Optional contacts  
only for Hercules  
with one ore more  
buttons

### Contact scheme for Hercules-S with up to 5 speeds/positions

Standard version 5 - 5 speeds/positions

		Contact number					
		1	2	4	10	11	12
Speed / Position	Direction	A					
		B					
5							
4							
3							
2							
1							
0							
1							
2							
3							
4							
5							

		Speed / Position									
		Direction C ← → D									
Contact number	5	4	3	2	1	0	1	2	3	4	5
	6										
7											
9											
13											
14											
15											



Customized version

		Contact number					
		1	2	4	10	11	12
Speed / Position	Direction	A					
		B					
5							
4							
3							
2							
1							
0							
1							
2							
3							
4							
5							

		Speed / Position									
		Direction C ← → D									
Contact number	5	4	3	2	1	0	1	2	3	4	5
	6										
7											
9											
13											
14											
15											

Instructions  
If a customized version is required, fill in the contact form for the two directions A-B C-D. Blacken the boxes corresponding to the contacts that must be associated with the movement of the joystick.

## Potentiometers and Encoders

## Potentiometer

- PRVV9035PE 2,2 kΩ
  - PRVV9020PE 4,7 kΩ
  - PRVV9025PE 10 kΩ
  - Preset only

## Instructions

**Potentiometers:** write the number corresponding to the potentiometer or to the preset required in the desired position in the diagram opposite.

## Encoders Egon-AL

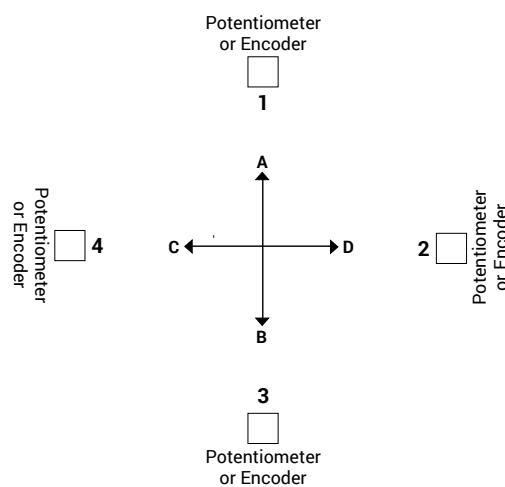
- F19SA000001 single
  - F19RA000001 redundant

## Analogue output

- Current output 4-20 mA
  - Voltage output 1 ÷ 5 Vdc
  - Voltage output 2 ÷ 10 Vdc

## Instructions

**Encoders:** write the number corresponding to the encoder required in the desired position in the diagram opposite and tick the box corresponding to the type of analogue output required.



## Attention

Increasing signal in positions 1 and 2.  
Decreasing signal in positions 3 and 4.

## Remarks

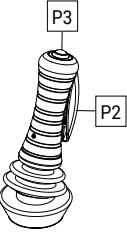
## HERCULES-CK - REQUEST FORM FOR NON STANDARD JOYSTICK

### Grip

- Knob (IP 65 assembled in specific enclosure)
- Function  
 Free movement  
 Mechanical interlock
- 

- P1 1NO button  
 Colour of button  
 black       green

- T handle (IP 65 assembled in specific enclosure)
- Function  
 Free movement  
 Mechanical interlock
- 

- Handle (IP 44 assembled in specific enclosure)
- Function  
 Free movement
- P2 1NO button
- P2 1NO button + P3 1NO button
- Colour of button  
 black       green
- 

- Ergonomic handle (IP43 assembled in specific enclosure)
- 

1NO buttons can be used as electrical interlock.

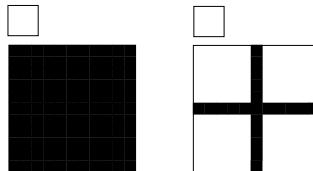
### Movement

- Stepped - spring return  
 Linear - spring return

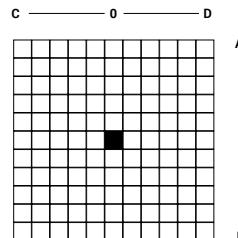
### Lever guide

Standard lever guide

Customized lever guide



5 steps directions A-B  
 5 steps directions C-D  
 360° movement

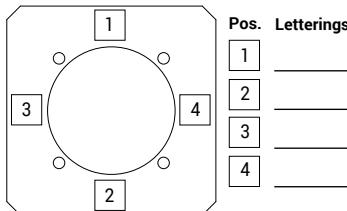


5 steps directions A-B  
 5 steps directions C-D  
 Cross movement

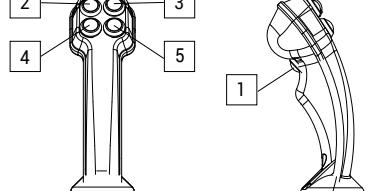
### Joystick label

- Blank label  
 Lifting-Traverse symbols  
 Trolley-Rotation symbols

- Customized label



### Actuators for ergonomic handle



### Actuator\* and label letterings

Pos.

- Yes     No PRVV5080PE Green button 1NO contact + 1 common\*\*

Type Lettering

2	<input type="checkbox"/>	_____
3	<input type="checkbox"/>	_____
4	<input type="checkbox"/>	_____
5	<input type="checkbox"/>	_____

### Actuators for positions 2-3-4-5

- [A] PRVV5019PE Green button 1NO contact + 1 common
- [B] PRVV5020PE Black button 1NO contact + 1 common
- [C] PRVV0840PE 2 position selector ON-OFF 1 contact + 1 common
- [D] PRVV0842PE 2 position selector MOM-OFF 1 contact + 1 common
- [E] PRVV0830PE 2 maintained position selector ON-ON 2 contacts + 1 common
- [F] PRVV0831PE 3 maintained position selector ON-OFF-ON 2 contacts + 1 common
- [G] PRVV0832PE 2 position spring return selector ON-MOM 2 contacts + 1 common
- [H] PRVV0833PE 3 position selector MOM-OFF-MOM 2 contacts + 1 common
- [I] PRVV0834PE 3 position selector ON-OFF-MOM 2 contacts + 1 common

\* Maximum 5 contacts + 1 common available.  
 Ex.: 1NO contact in position 1 + 4 buttons A type.  
 1NO contact in position 1 + 4 selectors C type.  
 1NO contact in position 1 + 2 selectors G type.

\*\* In case of use of the electrical interlock function, connect it to the actuator in Position 1.

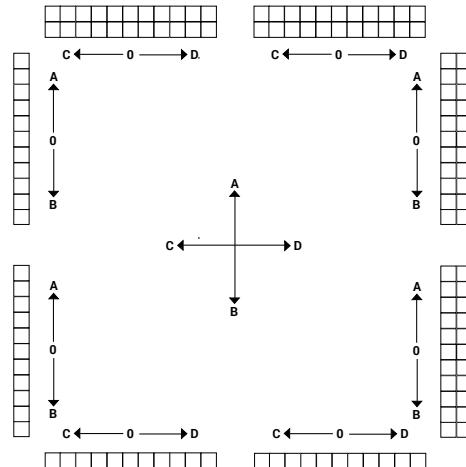
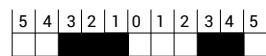
## Switches for mechanical interlock (when required)

- 1 switch PRSL0191XX with 1NC+1NC contacts.
- 1 switch PRSL1000PI with 1NO contact.
- 1 switch PRSL1000PI with 1NO contact + 1 switch PRSL1000PI with 1NO contact.
- 1 switch PRSL1001PI with 1NC contact.
- 1 switch PRSL1001PI with 1NC contact + 1 switch PRSL1001PI with 1NC contact.

## Contact diagram for Hercules-CK

### Instructions

Fill in the contact diagram blackening the boxes corresponding to the positions where the cams close the contacts (each bar of 11 boxes correspond to a switch; the central box corresponds to the zero position of the joystick). In the example, the contact is closed in positions 1-2-3 to the left and 3-4 to the right.



## Potentiometers and Encoders

### Potentiometer

- 1 PRVV9035PE 2,2 kΩ
- 2 PRVV9020PE 4,7 kΩ
- 3 PRVV9025PE 10 kΩ
- 4 Preset only

### Instructions

**Potentiometers:** write the number corresponding to the potentiometer or to the preset required in the desired position in the diagram opposite.

### Encoders Egon-AL

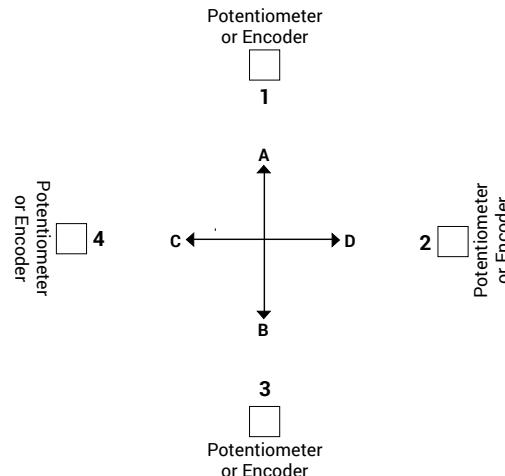
- 5 F19SA000001 single
- 6 F19RA000001 redundant

### Analogue output

- Current output 4-20 mA
- Voltage output 1 ÷ 5 Vdc
- Voltage output 2 ÷ 10 Vdc

### Instructions

**Encoders:** write the number corresponding to the encoder required in the desired position in the diagram opposite and tick the box corresponding to the type of analogue output required.



### Attention

Increasing signal in positions 1 and 2.  
Decreasing signal in positions 3 and 4.

