

Controllers and controller stations

Types XK and XJ

Catalogue
October

04



-
- The range of controllers type **XK**, controller stations type **XJ** and application examples pages 2 and 3

*Selection guide of controllers, types **XD** and **XK**. pages 4 and 5*

*Selection guide of controller stations and desks, type **XJ** pages 6 and 7*

Controllers

- For hoisting applications, type **XK**, terminology pages 8 and 9
- For “light hoisting” applications, type **XKB** pages 10 to 17
- For “medium hoisting” applications, type **XKD** pages 18 to 25
- For “heavy hoisting” applications, type **XKM** pages 26 to 39
- Dimensions pages 40 to 43

Potentiometers for controllers

- For standard applications, type **XKZ A** page 44
- For applications requiring an extended “neutral zone”, types **XKB Z** and **XKD Z** page 45

Controllers stations and desks

- Presentation pages 46 and 47
- Type **XJP A** for controllers **XKB** and Ø 22 mm pushbuttons, switches and pilot lights pages 48 and 49
- Type **XJ9 BA** for controllers **XKB** and Ø 22 mm or 30 mm pushbuttons, switches and pilot lights pages 50 and 51
- Dimensions pages 52 and 53

Fixed controller desk

- Type **XJC C** page 54

Fixed or rotating controller desks

- Types **XJC D** and **XJC E** pages 55 to 60
- Dimensions page 61

Controllers and controller stations

The range of controllers type **XK**
and controller stations type **XJ**



Controllers XKB

For “light hoisting” applications



Controllers XKD

For “medium hoisting” applications



Controllers XKM

For “heavy hoisting” applications



Portable controller stations XJP and XJ9

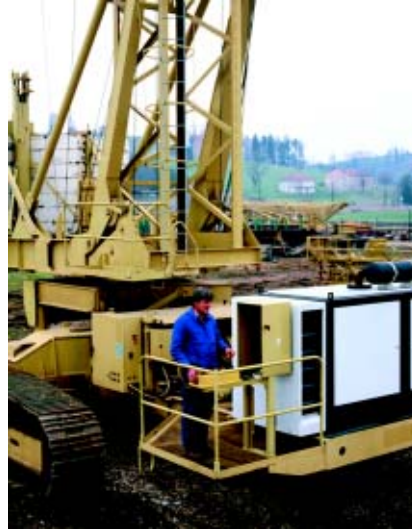
For “heavy hoisting” applications



Fixed or rotating controller desks XJC

For “heavy hoisting” applications

Public works cranes, stocking, materials handling, etc.



Public works cranes

Cranes, overhead travelling cranes (iron and steelworks, rolling mills, etc.)



Overhead travelling cranes



Public works cranes

Applications

"Light hoisting"
Compact and lightweight

For control of small materials handling equipment, elevating work platforms, fork-lift trucks, etc. Can be installed on control panels or enclosures types XAL, XAM and XAP	For control of materials handling equipment, public work cranes, etc. Can be installed on portable controller stations type XJP
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Mechanical durability (in millions of operating cycles)	1 in each direction	1 in each direction	1 in each direction
Number of directions	2 or 4 depending on model	4	4
	–	8	8
Number of movements	1 or 2	2	2
Maximum number of notches in each direction	XD2: 1 or 2 XD4, XD5: 1	3	3
Types of lever movement	■	■	■
Notched with stayput operation with spring return to zero operation	■	■	■
Unnotched with spring return to zero operation	–	■	■
Operating schemes	Predefined cams	Predefined cams	Variable composition cams
Maximum number of contacts per movement	XD2: 4 (1 or 2 N/O contacts in each direction) XD4, XD5: 2 (1 N/O contact in each direction)	4 or 4 + 1 zero (centre) position contact	4 or 4 + 1 zero (centre) position contact
Contact (1)	Supply	~ and ---	~ and ---
Nominal thermal current	10 A	10 A	10 A
Mechanical durability of contact blocks (in millions of operating cycles)	5	1	1
Control device	Vertical lever	Vertical lever	Vertical lever
Handles (2)	■	■	■
a simple	–	■	■
b1 with zero (centre) position mechanical interlocking	–	■	■
b2 with zero (centre) position mechanical and electrical interlocking	–	■	■
c1 "Dead man's" type	–	■	■
c2 with built-in pushbutton	–	■	■
Lever gate	Fixed composition 30° in each direction	Variable composition	Variable composition
Maximum number of potentiometers per movement	–	1 or 2 depending on contact block arrangement	1 or 2 depending on contact blocks arrangement

Type references

XD2, XD4, XD5	XKB A	XKB E
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Page(s)

Please refer to our "Human-Machine interfaces" catalogue	12	14
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(1) N/C slow break contacts with positive opening operation. Contacts closed in absence of cam lobe.
 (2) Handles type b1 and b2 are designed in accordance with the French hoisting standard NF E 52070 (Dec. 1985): Electrical equipment of hoisting devices, paragraph 8231: all control devices must be designed, constructed and positioned in such a manner as to avoid any accidental operation...

“Medium hoisting”
 Compact and fully configurable unit

For control of cranes, overhead travelling cranes, etc.
 Can be installed on fixed seated controller desks type XJC

“Heavy hoisting”
 Extremely robust and fully configurable unit

For control of overhead travelling cranes (iron and steelworks, rolling mills) etc.
 Can be installed on seated controller desks type XJC



3 in each direction	4 in each direction	4 in each direction	4 in each direction
4	4	2	2
8	8	2	2
2	2	1	1
5	6	6	9
■	■	■	■
■	■	■	■
■	■	■	■
Variable composition cams	Variable composition cams	Variable composition cams	Variable composition cams
16	24	24	12
~ and ---	~ and ---	~ and ---	~ and ---
10 A	20 A	20 A	20 A
3	4	4	4
Vertical lever	Vertical lever	Vertical lever	Side lever
■	■	■	■
■	■	■	–
■	■	■	–
■	■	■	–
■	■	■	–
Predefined or customised	Predefined or customised	–	–
2	2	2	1
XKD F	XKM A	XKM B	XKM C
20	28	28	34

Controller stations and desks

For hoisting applications, type XJ

Applications	"Heavy hoisting"
	Portable controller stations
	For remote control of overhead travelling cranes



Model	Portable	Yes	
	Fixed	With harness, protective guards and chest frame, depending on model	
		-	
Associated controller type	XKB	XJP A5: 2 controllers type XKB fitted with 4-contact blocks per movement, with or without potentiometers XJP A6: 2 controllers type XKB fitted with 4-contact blocks per movement + 1 zero (centre) position contact, with or without potentiometers	-
	XKD	-	2 controllers type XKD F with or without potentiometers
	XKM	-	-
Other components		Ø 22 mm pushbuttons, switches and pilot lights: up to 8 units	Ø 22 mm pushbuttons, switches and pilot lights: 1 to 7 units depending on model Ø 30 mm pushbuttons, switches and pilot lights: 1 to 5 units depending on model
Material		Glass-reinforced polyester Colour: yellow	
Type of seat		-	
Dimensions		430 x 150 x 230 (see page 52)	XJ9 BA1: 480 x 255 x 395 XJ9 BA2: 605 x 258 x 645 (see page 53)
Weights		<input type="checkbox"/> Empty with cable boot: 2 kg <input type="checkbox"/> Fitted: approximately 4 kg	XJ9 BA1: <input type="checkbox"/> Empty with cable boot: 3.5 kg <input type="checkbox"/> Fitted: approximately 7.5 kg XJ9 BA2: <input type="checkbox"/> Empty with cable boot: 4.5 kg <input type="checkbox"/> Fitted: approximately 8.5 kg
Type references		XJP A●	XJ9 BA●
Page(s)		48 and 49	50 and 51

“Heavy hoisting”

Fixed or rotating seated controller desks

For control of cranes, overhead travelling cranes (iron and steelworks, rolling mills, etc.)



-		
Fixed to the floor	Fixed to the floor Seat + enclosures rotating assembly (friction bearing)	Fixed to the floor
-		
1 controller type XKD maximum on each enclosure, with or without potentiometers		
1 controller type XKM maximum on each enclosure, with or without potentiometers	1 or 2 controllers type XKM depending on width of enclosure, with or without potentiometers	
-	Ø 22 mm or Ø 30 mm pushbuttons, switches and pilot lights Up to 22 units, depending on enclosures selected	
Steel		
“High comfort” seat, with armrests and headrest, depending on model Helical spring suspension with double-action hydraulic shock absorbers		
1100 x 630 x 1180 mm (see page 61) Enclosures: 300 x 225 x 500 mm	1360 x 610 x 1170 mm (see page 61) Enclosures: width 250 to 430 mm Customisable mounting (see pages 56 to 60)	
55 kg without equipment		

XJC C●	XJC D●	XJC E●
54	55	55

Controller

The controllers are units designed to control hoisting and materials handling equipment by grouping their electrical circuits. They comprise adaptable sub-assemblies that enable the construction of many different versions. Used in association with automation system equipment, they ensure the starting, acceleration and braking of the drive motors. They are designed for fitting into portable controller stations or controller desks. The mounting is dust and damp protected.

Mechanical block

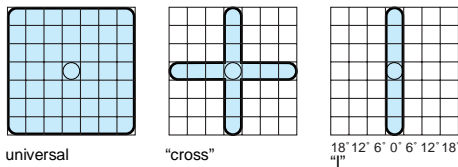
Articulated mechanical assembly that holds the control lever, lever gate, actuating mechanism, cam carriers, contacts and potentiometer adaptation device.

Control lever

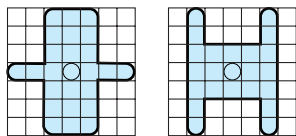
Operating device that enables separate or simultaneous control of the movements. Fitted to it are dust and damp protecting bellows, the handle and mechanical and electrical safety devices that are actuated when the controller lever is returned to its zero (centre) position.

Lever gate

Standard lever gates



Examples of special lever gates



2 types of lever gate:

■ Standard types:

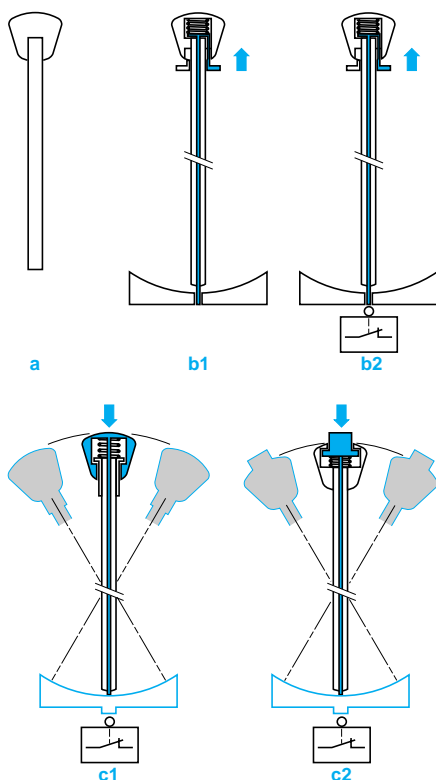
- universal: allows the lever to move to its maximum travel in 1 or 2 directions simultaneously ("universal" or "8-direction" controller),
- "cross" or "I" gates: only allow the lever to move to its maximum travel in 1 direction at a time.

■ Special types: related to the application, they are used to control the required combination of movements.

End stops

Additional devices for limiting the lever travel to a number of positions in a given direction.

Handles



a Simple handle: fixed knob screwed onto the control lever.

b1 Handle with zero (centre) position mechanical interlock.

Operation:

The knob of the handle comprises a fixed part (upper section) and a moving part (lower section). When the lever is in the zero (centre) position, it is mechanically locked by a sliding rod within the lever. To disengage the lock, the lower part of the handle is pulled upwards thus freeing the rod.

b2 Handle with zero (centre) position mechanical interlock + electrical contact.

Mechanical operation identical to that described above.

When the lever is in the zero (centre) position, the rod actuates a contact block. The disengagement of the lock causes the contact(s) in the block to change state.

c1 "Dead man's" handle.

Operation:

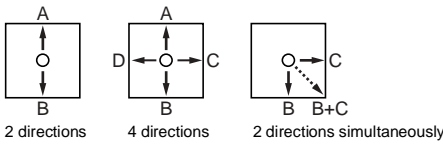
The knob of the handle comprises a fixed part (lower section) and a moving part (upper section). When the upper section of the knob is pushed downwards it pushes a sliding rod within the lever. This rod actuates a moving bowl which, in turn, causes a contact block (located in the lower part of the mechanism) to change state and remain in this condition irrespective of the control lever position.

c2 Handle with built-in flush or projecting pushbutton (audible alarm type).

Mechanical operation identical to that described above.

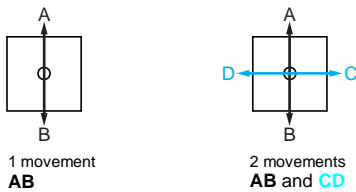
The handle is fixed and it is only the pushbutton that operates the sliding rod.

Direction



This is the direction of operation of the control lever away from its zero (centre) position towards one of 2 or 4 directions (either 2 directions directly in line or 4 directions at 90°).
Diagonal movement is the operation of 2 directions simultaneously.

Movement

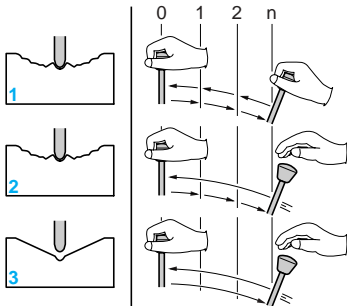


The movement is the combination of 2 directions either side of the zero position that are directly in line.

Electrical position

This is the change of state of a contact block obtained by angular displacement of the control lever.

Types of lever movement



Three different types of lever operation for each direction:

1 Notched positions, with stayput operation.

The control lever is moved notch by notch from its zero (centre) position to its maximum travel position in the required direction.
The lever maintains its position when the operator releases the handle.

2 Notched positions, with spring return to zero operation.

Notched operation identical to that described above but with an automatic device that returns the lever to its zero (centre) position when the operator releases the handle.

3 Unnotched positions, with spring return to zero operation.

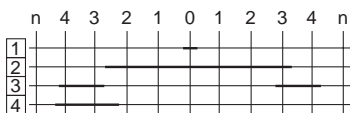
The control lever of the controller is moved from its zero (centre) position to its maximum travel position in the required direction without notching.
Irrespective of its position, the lever spring returns to the zero (centre) position when the operator releases the handle.

Electrical contacts

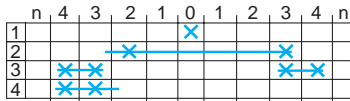
When designing the scheme take into account that all contacts are closed until actuated (opened) by an operating cam.

Cam schemes

Electrical scheme in accordance with IEC 113-4



Controller scheme in accordance with IEC 337-2A



The contact blocks are actuated by a series of various length cams which are arranged to provide the required scheme.

These cams can either be:

- variable composition, i.e. comprising different sub-assemblies mounted on a cam carrier,
 - predetermined, i.e. for a function that is widely used in conventional schemes.
- Example: reversing cams for direction of operation.

Cam carriers

Mechanism designed for mounting cams on for controllers with variable composition cams.

Cam actuation of contacts

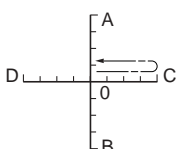
When actuated by the cam lobe, the contact opens thus ensuring positive opening operation. Therefore, the presence of a cam corresponds to the absence of a cross or line on the scheme.

Example of graphic representation of a scheme

The various methods for indicating the operating sequence of the contacts are represented by schemes in accordance with IEC 113-4 or IEC 337-2A (section 2).
The ordering grids for XK controllers are designed in accordance with IEC 337-2A (section 2).

Take particular note of the way an assured electrical overlapping is represented as is shown for contacts 2 and 4 between positions 2 and 3 (see diagram to left).

Operating cycle



An operating cycle applied from an initial common O position is the passing from this initial position to the extreme position in each direction and subsequent return to the initial O position.

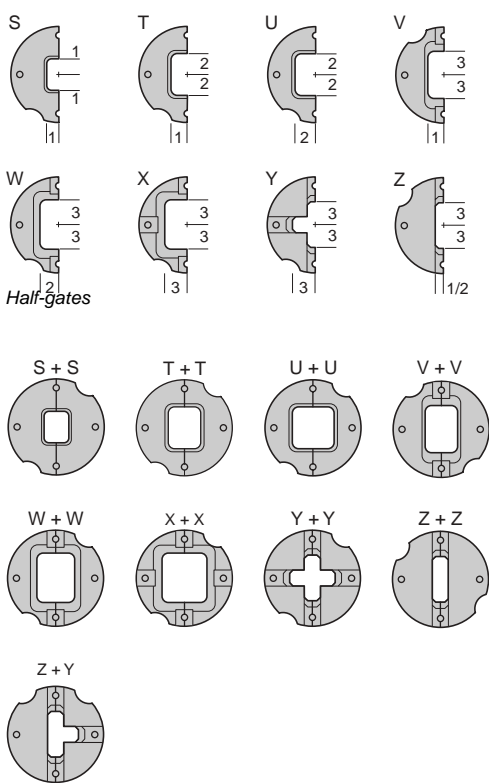
Controllers

For “light hoisting” applications, type XKB

109229-94_M



XKB ●



9 main combinations

Compact and lightweight units, designed to control “light hoisting” and materials handling equipment. Mainly for use in portable stations.

2 models:

- **XKB A:** controllers with predefined, non modifiable, scheme.
- **XKB E:** controllers with variable composition schemes.

Control lever

Length: 130 mm. Travel in each direction: 28° maximum.

Lever gate

Universal and modifiable.

Specific, by adding half-gates to the universal lever gate (referenced by letter) 9 main combinations. .

End stops

The total lever travel can be limited to 20° or 12° by using removable end stops (**XKB Z972** for 20°, **XKB Z971** for 12°) when the lever gate comprises half-gates Y or Z.

Handles

- Simple handle with zero (centre) position contact (closed at zero).
- Handle with zero (centre) position mechanical interlock + contact (closed at zero).
- “Dead man’s” handle with contact (open when handle released).
- Handle with built-in flush or projecting pushbutton and contact (open when pushbutton or handle released).

Note: it is important to decide which type of handle is required when selecting the controller, since modification cannot be affected after installation.

Electrical positions

3 positions maximum in each direction.

Types of lever movement

- **Notched positions, with stayput operation:** 3 notches maximum in each direction (12°, 20°, 28°).
- **Notched positions, with spring return to zero operation:** 3 notches maximum in each direction (12°, 20°, 28°). (XKB E: only 1 contact may be used at each notch.)
- **Unnotched positions, with spring return to zero operation:** 28° maximum travel in each direction. (XKB E: only 1 contact may be used for each spring return to zero position.)

Contacts

The contact blocks used for establishing the scheme are located in a monobloc assembly. There are 2 types:

- Block with 4 contacts per movement.
- Block with 4 contacts per movement + 1 zero (centre) position contact.

For both types, an additional contact is available. Its function depends on the type of handle.

Cam schemes

■ **XKB A:** standard schemes can be established using predefined cams. These cams are moulded and cannot be modified.

2 versions:

- Using a block with 4 contacts per movement: 2 reversing cams and 2 function cams per movement.
- Using a block with 4 contacts per movement + 1 zero (centre) position contact: 2 reversing cams and 2 function cams per movement + 1 zero (centre) position cam.

■ **XKB E:** special schemes can be established using snap-on cams (for each position) mounted on cam carriers. (overlapping contact operation is not possible).

2 versions:

- Using a block with 4 contacts per movement: 4 variable composition cams per movement.
- Using a block with 4 contacts per movement + 1 zero (centre) position contact: 4 variable composition cams per movement + 1 fixed composition zero (centre) position cam.

Legend

One 100 x 100 mm anodised aluminium legend plate with matt satin finish. Standard “hoist-long travel” and “traverse-slew” symbols or text (to be stated on Order form, see page 13).

Potentiometer adaptation

- 2 potentiometers maximum per movement when using block with 4 contacts per movement.
- 1 potentiometer maximum per movement when using block with 4 contacts per movement + 1 zero (centre) position contact.

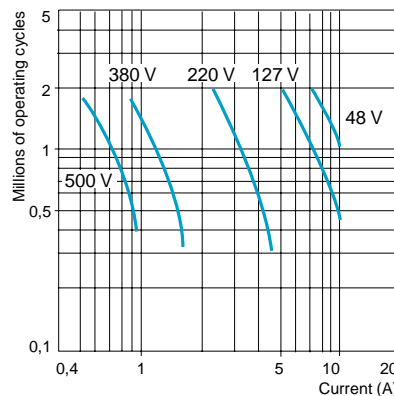
Environment		
Conformity to standards		IEC 337-1, NF C 63-140, VDE 0660 part 2
Product certifications		XKB A: CSA ~ 300 V “heavy duty”, ≡ “standard duty”, ASE: 500 mV max., 10 A max., 100 VA max., USSR
Protective treatment		Standard version “TC”
Ambient air temperature	For storage	°C - 40...+ 70
	For operation	°C - 20...+ 70
Operating position		All positions
Vibration resistance		6 gn (1 to 70 Hz)
Shock resistance	Conforming to IEC 68-2-27	20 gn, duration 11 ms
Electric shock protection	Conforming to IEC 536 and NF C 20-030	Class I
Maximum operating lever force required in each direction		daN < 1.7
Degree of protection	Conforming to IEC 529	IP 54 (unit with simple handle mounted in dust and damp proof enclosure)
Mechanical durability (In millions of operating cycles)		1 in each direction
Weight		kg XKB A and XKB E : ≈ 0.850

Contact block characteristics		
Type		Monobloc assembly comprising 9 double-break contacts (8 function contacts and 1 zero position contact mounted at lever base) or monobloc assembly comprising 11 double-break contacts (8 function contacts + 2 zero position contacts and 1 zero position contact mounted at lever base)
Conventional thermal current	A	10 conforming to IEC 337-1, NF C 63-140, VDE 0660, CSA C 22-2 n° 14
Rated insulation voltage	V	≈ 500 conforming to NF C 20-040, VDE 0110, IEC 158-1
Insulation category		Group C conforming to NF C 20-040 and VDE 0110
Contact operation		Slow break, double-break contacts with positive opening operation; N/O (green operator). N/C contact (red operator): zero position contact mounted at lever base
Resistance across terminals	mΩ	≤ 25 (in accordance with NF C 93-050, at 1 A)
Terminal referencing		Conforming to CENELEC EN 50013
Short-circuit protection		10 A cartridge fuse type gG conforming to IEC 337-1B, VDE 0660 part 2

Operational power
 Conforming to IEC 337-1
 Utilisation categories AC-11 and DC-11
 Operating rate: 3600 operating cycles/hour
 Load factor: 0.5

a.c. supply ~ 50-60 Hz
 ~ Inductive circuit

d.c. supply ≡



Power broken in W for 1 million operating cycles

Voltage V	24	48	120
m	90	90	75

Connection	Captive screw clamp terminals	Clamping capacity: □ minimum 1 x 0.5 mm ² , □ maximum, with or without cable end: 2 x 1.5 mm ² or 1 x 2.5 mm ² , or by clips conforming to NF C 20-120
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Controllers

For “light hoisting” applications, types **XKB A** and **XKB E**

Grid for composing the reference of a controller

Reference of controller type XKB

	Model	Contacts	Handle	Lever movement		Potentiometer adaptation
				AB	CD	
XKB	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Model						
With predefined scheme	A					
With variable composition scheme	E					
Contact blocks						
Block with 4 contacts per movement	Screw clamp terminal connections	1				
	6.3 clip connections	2				
Block with 4 contacts per movement	Screw clamp terminal connections	3				
+ 1 zero (centre) position contact	6.3 clip connections	4				
Handle						
Simple + zero (centre) position electrical interlocking (contact closed in rest position)			1			
With zero (centre) position mechanical and electrical interlocking (contact closed in rest position)			2			
“Dead man’s” type (contact open when released)			4			
With built-in flush pushbutton (contact open in rest position)			5			
With built-in projecting pushbutton (contact open in rest position)			6			
Type of lever movement						
On movement AB						
Movement not required (blocked)				0		
Notched positions, with stayput operation				1		
Unnotched positions, with spring return to zero operation				2		
Notched positions, with spring return to zero operation (1)				3		
On movement CD						
Movement not required (blocked)					0	
Notched positions, with stayput operation					1	
Unnotched positions, with spring return to zero operation					2	
Notched positions, with spring return to zero operation (1)					3	
Potentiometer adaptation						
Without adaptation nor potentiometer						0
Adaptation only (without potentiometer)	On movement AB					4
	On movement CD					5
	On movements AB + CD					6
Adaptation + potentiometer (2)	On movement AB					7
	On movement CD					8
	On movements AB + CD					9

(1) Type of lever operation recommended when using a potentiometer.

(2) Potentiometer type and value to be stated on the Order form. For standard application potentiometers, see page 44.

Order form

(specimen suitable for photocopying)

Controllers

For "light hoisting" applications, type **XKB A** Controllers XKB A with predefined, non modifiable schemes, factory assembled

See example on page 15

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 12)

Model	Contacts	Handle	Lever movement AB	CD	Potentiometer adaptation
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Number of identical units **XKB**

For Schneider Electric Industries use only

Order N°	Item N°	MOD	ETI	POI	GLV	CTS	MAB	MCD	PAB	PCD
		XKB	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Lever gate

In accordance with the half-gates available, sketch and crosshatch the lever's field of movement on the scheme grids below.
In the absence of this information, the controller will be supplied with a "universal" gate.

Legend

- Without legend
- With blank legend **XKB Y1**
- With "traverse-slew" symbols, **XKB Y2**
- With "hoist-long travel" symbols, **XKB Y3**
- With specific engraved text, **XKB Y1001** (clearly state the text on the scheme below)
- Left-hand operated unit
- Right-hand operated unit

Potentiometer adaptation

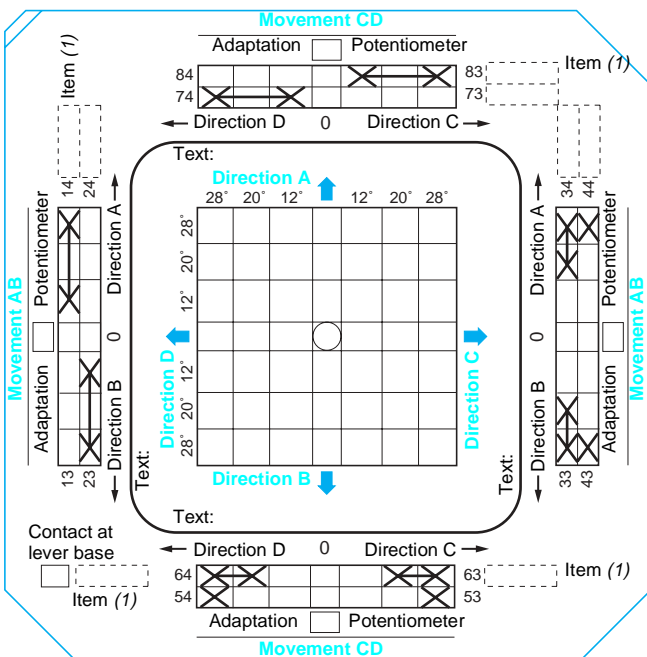
Cross the required position on the schemes below.

On movement AB Type/size: _____
Value: _____

On movement CD Type/size: _____
Value: _____

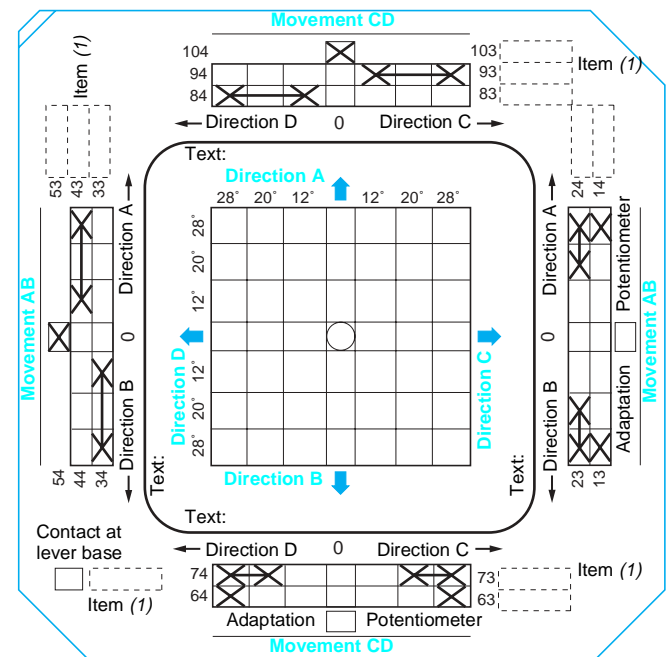
Scheme 1: 4 contacts per movement (viewed from above)

Orientation locator



Scheme 2: 4 contacts + 1 zero (centre) position contact per movement (viewed from above)

Orientation locator



(1) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

Controllers

For "light hoisting" applications, type **XKB E**
Controllers XKB E with variable and modifiable
schemes, factory assembled

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 12)						
Model	Contacts	Handle	Lever movement AB	CD	Potentiometer adaptation	

Number of identical units **XKB** **E**

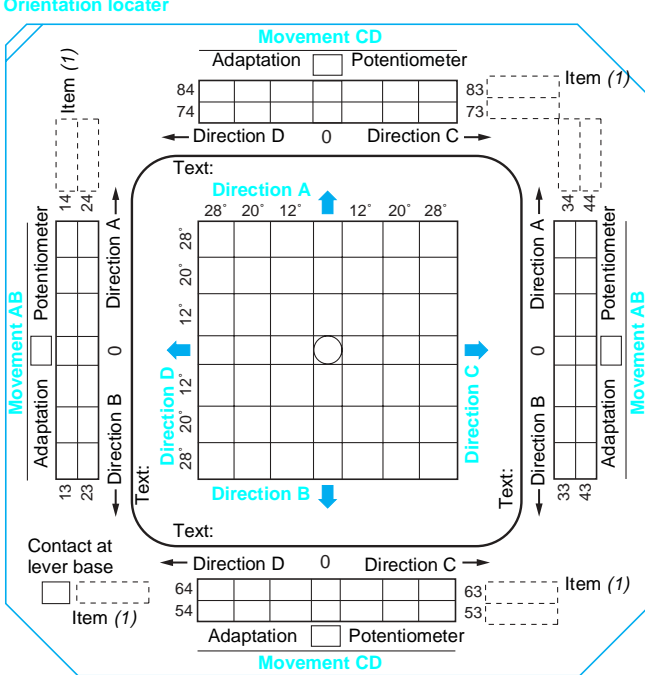
For Schneider Electric Industries use only										
Order N°	Item N°	MOD	ETI	POI	GLV	CTS	MAB	MCD	PAB	PCD
		XKB <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Lever gate	Potentiometer adaptation
In accordance with the half-gates available, sketch and crosshatch the lever's field of movement on the scheme grids below. In the absence of this information, the controller will be supplied with a "universal" gate.	Cross <input checked="" type="checkbox"/> the required position on the schemes below.
	On movement AB Type/size: _____ Value: _____
	On movement CD Type/size: _____ Value: _____

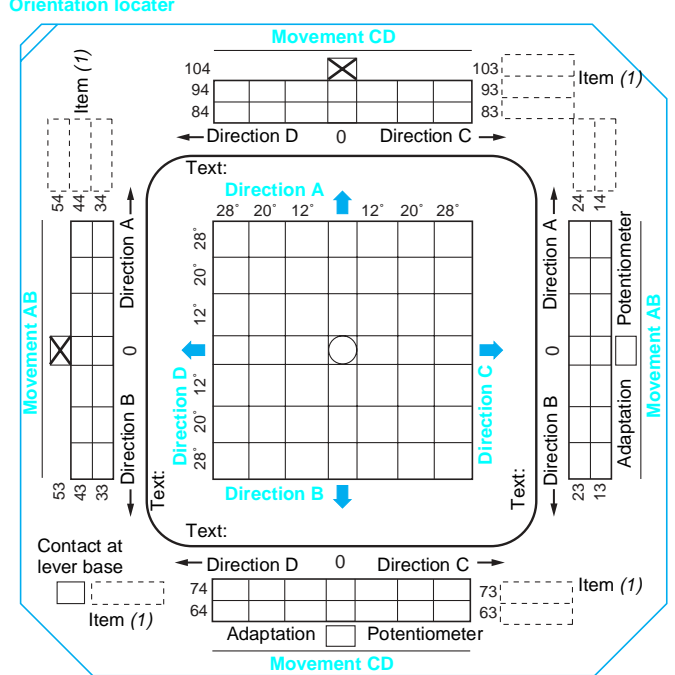
Legend	
Without legend	<input type="checkbox"/>
With blank legend, XKB Y1	<input type="checkbox"/>
With "traverse-slew" symbols, XKB Y2	<input type="checkbox"/>
With "hoist-long travel" symbols, XKB Y3	<input type="checkbox"/>
With specific engraved text, XKB Y1001 (clearly state the text on the scheme below)	<input type="checkbox"/>
Left-hand operated unit	<input type="checkbox"/>
Right-hand operated unit	<input type="checkbox"/>

△ If the scheme is not defined, all **XKB E** controllers will be supplied with the standard scheme as used for XKB A.

Scheme 1: 4 contacts per movement (viewed from above)



Scheme 2: 4 contacts + 1 zero (centre) position contact per movement (viewed from above)



(1) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.
Spring return operation: only 1 contact can be used with spring return at each notch.

Requirement

A 2 movement controller:
"hoist-long travel".
"Universal" lever gate, limited to 2 "lower" positions.

Model

With variable composition scheme (customised electrical scheme as shown below)

Contact blocks

Block with 4 contacts + 1 zero (centre) position contact per movement (screw clamp terminals).

Handle

"Dead man's" type

Type of lever operation on movement AB

Unnotched positions, with spring return to zero operation

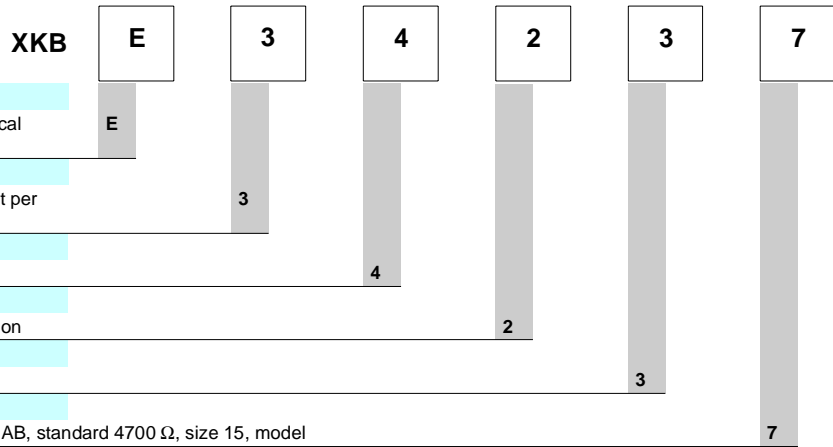
Type of lever operation on movement CD

Notched positions, with spring return to zero operation

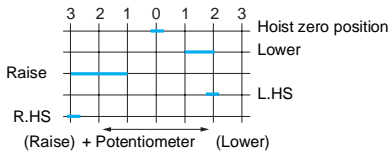
Potentiometer adaptation

With adaptation device + potentiometer on movement AB, standard 4700 Ω, size 15, model

Composition of the reference (see page 12)



Electrical scheme for movement AB "hoist"

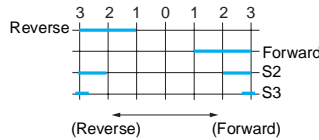


Lever gate

In accordance with the half-gates available, sketch and crosshatch the lever's field of movement on the scheme grids below.

In the absence of this information, the controller will be supplied with a "universal" gate.

Electrical scheme for movement CD "long travel"



Potentiometer adaptation

Cross the required position on the schemes below.

On movement AB

Type/size: **XKZ A15047**

Value: **4700 Ω**

On movement CD

Type/size:

Value:

Legend

Without legend

With specific engraved text, **XKB Y1001**
(clearly state the text on the scheme below)

With blank legend, **XKB Y1**

Left-hand operated unit

With "traverse-slew" symbols, **XKB Y2**

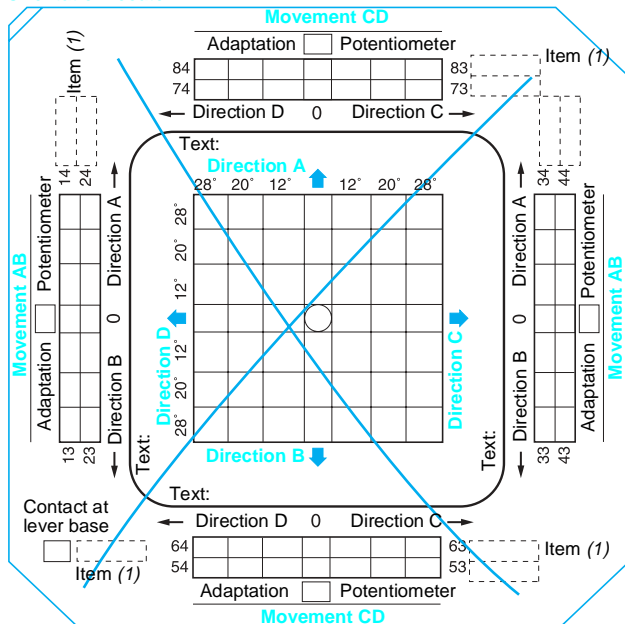
Right-hand operated unit

With "hoist-long travel" symbols, **XKB Y3**

If the scheme is not defined, all **XKB E** controllers will be supplied with the standard scheme as used for XKB A.

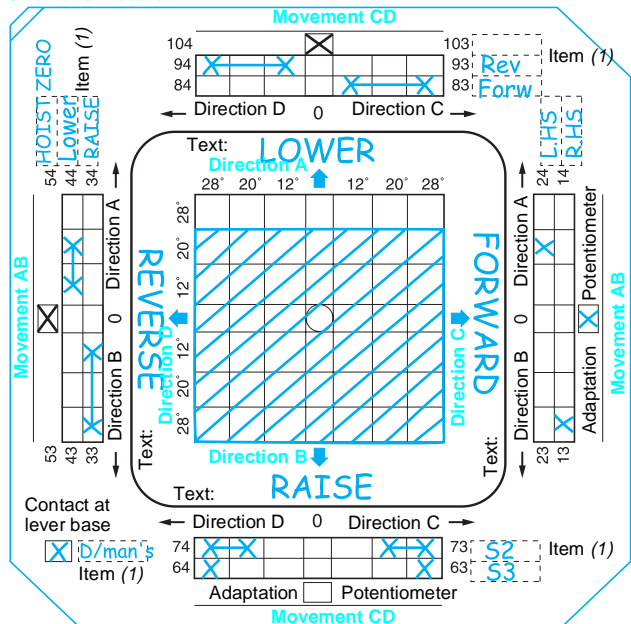
Scheme 1: 4 contacts per movement (viewed from above)

Orientation locator



Scheme 2: 4 contacts + 1 zero (centre) position contact per movement

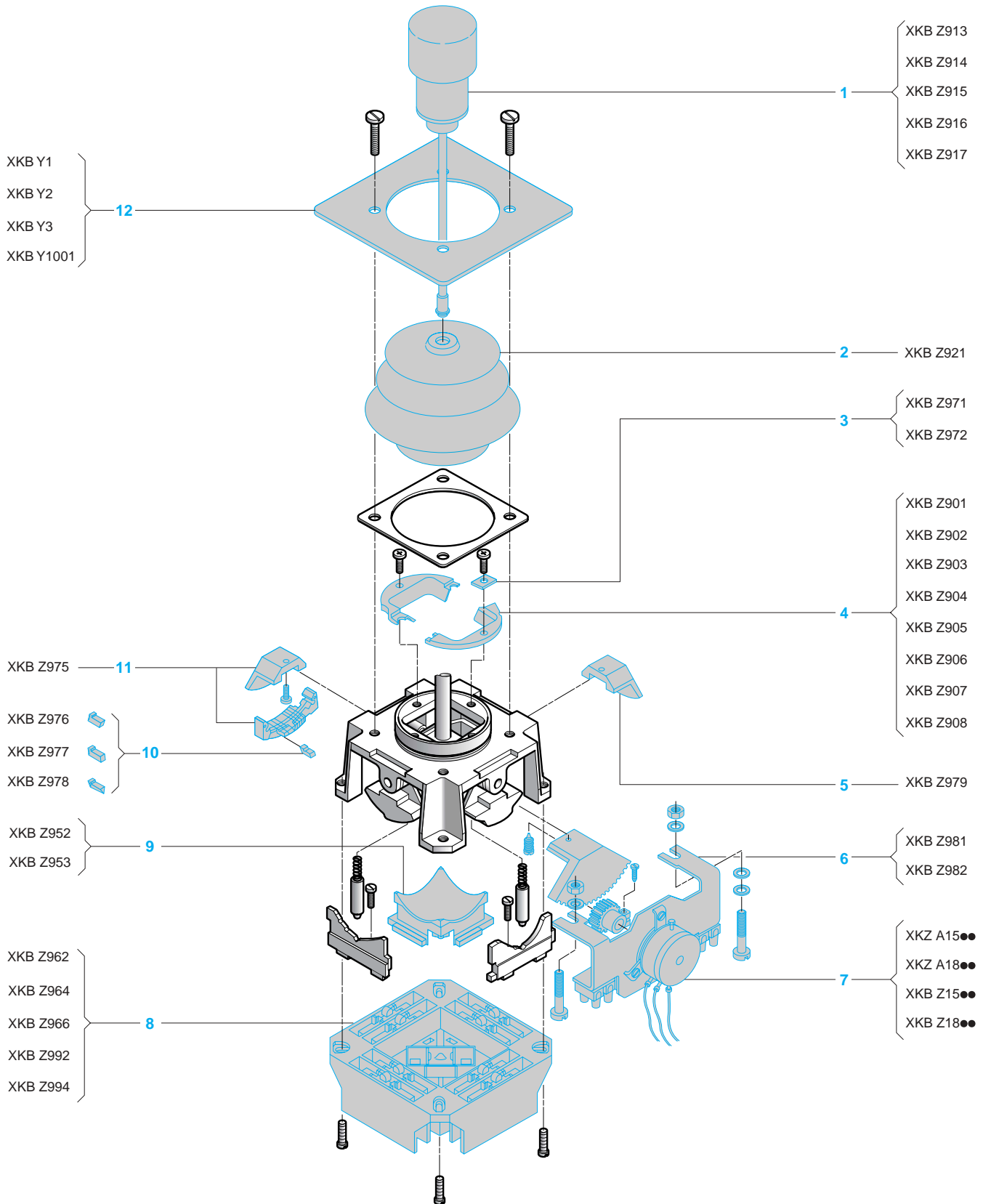
Orientation locator



(1) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.
Spring return operation: only 1 contact can be used with spring return at each notch.

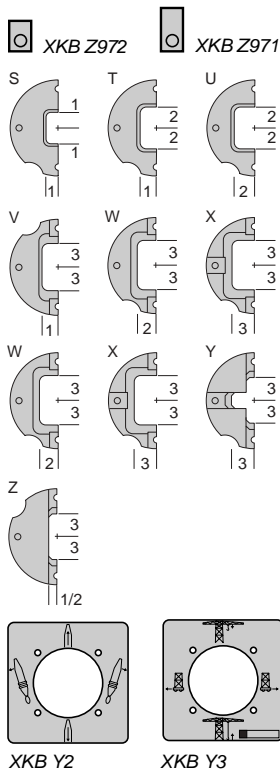
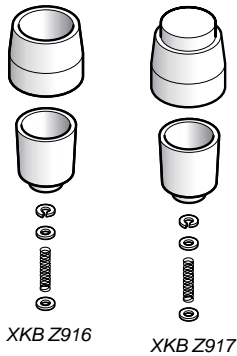
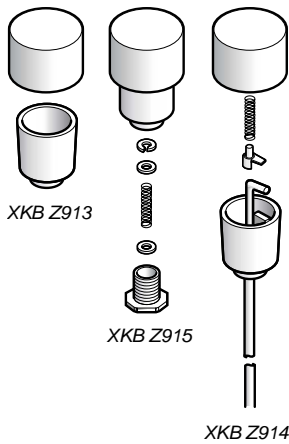
Controllers

For "light hoisting" applications, type **XKB**
Separate components



Controllers

For "light hoisting" applications, type **XKB**
Separate components



Description	Item	Characteristics	Unit reference	Weight kg
Bellows	2	-	XKB Z921	0.060
Handles △ Not interchangeable between different models	1	Simple	XKB Z913	0.030
		With zero (centre) position interlocking	XKB Z914	0.040
		"Dead man's" type	XKB Z915	0.045
		With built-in flush pushbutton	XKB Z916	0.030
		With built-in projecting pushbutton	XKB Z917	0.030
Lever gate Universal and modifiable Specific, by adding half-gates to the universal lever gate (referenced by letter)	4	S	XKB Z901	0.005
		T	XKB Z902	0.005
		U	XKB Z903	0.005
		V	XKB Z904	0.005
		W	XKB Z905	0.005
		X	XKB Z906	0.005
		Y	XKB Z907	0.005
		Z	XKB Z908	0.005
Removable end stops Sold in lots of 10	3	Stop limiting to 1 notch of movement	XKB Z971	0.025
		Stop limiting to 2 notches of movement	XKB Z972	0.020
Contacts: block with 4 contacts per movement Screw clamp terminal connections	8	For use with simple handle or handle with zero (centre) position interlocking	XKB Z962	0.185
		For use with "Dead man's" handle or handle with built-in pushbutton	XKB Z966	0.185
Contacts: block with 4 contacts per movement + 1 zero (centre) position contact Screw clamp terminal connections	8	For use with simple handle or handle with zero (centre) position interlocking	XKB Z992	0.215
		For use with "Dead man's" handle or handle with built-in pushbutton	XKB Z994	0.215
Cam carriers for variable composition cams (XKB E only) Sold in lots of 20	11	-	XKB Z975	0.105
Cams (XKB E only) Sold in lots of 50	10	Right-hand position (colour: green)	XKB Z976	0.010
		Left-hand position (colour: red)	XKB Z977	0.010
		Pass cam (colour: black)	XKB Z978	0.010
Zero (centre) position cam with fixing screw	5	-	XKB Z979	0.010
Lever base adaptations	9	Interlocking bowl	XKB Z952	0.010
		Bowl for "Dead man's" handle or handle with built-in pushbutton	XKB Z953	0.010
Legends	12	Blank	XKB Y1	0.025
		"Traverse - slew"	XKB Y2	0.025
		"Hoist - long travel"	XKB Y3	0.025
		With specific engraved text	XKB Y1001	0.025
Potentiometer adaptation kits (1)	6	Size 15	XKB Z981	0.090
		Size 18 (2)	XKB Z982	0.090
Potentiometers for controllers XKB	7	-	XKZ A15●●, A18●● XKB Z15●●, Z18●● See pages 44 and 45	-

(1) Including 13 tooth pinion.

- The maximum lever travel of 28° per direction corresponds to a potentiometer shaft rotation of 161°.
- Levers with friction drive facility are available under certain conditions: please consult your Regional Sales Office.

(2) The size 18 potentiometer adaptation on an XKB controller prevents it from being mounted in an XJP controller station.

Controllers

For “medium hoisting” applications, type **XKD**

109230-34-



XKD F

Compact and fully configurable units designed to control “medium hoisting” equipment.

Mainly for use on fixed control stations or seated controller desks type **XJC**.

1 model:

- **XKD F**: controller with variable composition schemes.

Control lever

Length: 200 mm. Travel in each direction: 36° maximum.

Lever gate

Integral, non removable, part of the mechanical block. Must be specified on the Order form.

Handles

- Simple handle.
- Handle with zero (centre) position mechanical interlock.
- Handle with zero (centre) position mechanical interlock + 1 C/O snap action contact.
- “Dead man’s” handle + slow break contact(s).
- Handle with built-in flush or projecting pushbutton + slow break contact(s).

Angular electrical positions

- 6 positions maximum in each direction.

Types of lever movement

■ Notched positions, with stayput operation

2 versions:

- 5 notches maximum in each direction, at 12°, 18°, 24°, 30° and 36° (6° per notch), only when used with variable composition cam carriers comprising 4 or 8-contact blocks (1st notch at 6°).
- 3 notches maximum in each direction, at 12°, 24° and 36° (12° per notch), only when used with variable composition cam carriers comprising 2-contact blocks.

Note: It is possible to use, on the same movement, a “5 notch max.” cam carrier combined with a “3 notch max.” cam carrier. The lever operation is “5 notch” type.

■ Notched positions, with spring return to zero operation

3 or 5 notches maximum in each direction depending on the versions stated above.

△ 4 simultaneous contacts max. with spring return can be used at the 1st (12°) notch.

■ Unnotched positions, with spring return to zero operation

36° maximum travel in each direction.

△ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts maximum at each subsequent 6° position.

Contacts

16 contacts maximum per movement.

The contact blocks are mounted in pairs on a fixing plate.

Cam schemes

2 versions:

■ Variable composition cams, 6° per position; 4 or 8-contact cam carriers.

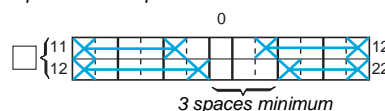
- From 1 to 5 mechanical positions.
- Overlapping contact operation possible (see graphic representation on page 9) except between the 4th and last position.

■ Variable composition cams, 12° per position; 2-contact cam carriers.

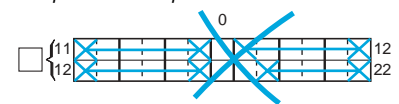
- From 1 to 3 mechanical positions.
- The contacts can be actuated 6° by 6° approx., except under the following conditions:

For technical reasons, it is essential to have at least 3 spaces on the electrical scheme for the same contact.

2 possible examples



2 impossible examples



The 2-contact cam carriers are compact and do not increase the size of the mechanical block base.

Legend

One 120 x 120 mm anodised aluminium legend plate with matt satin finish.

Text to be stated on Order form.

Potentiometer adaptation

2 potentiometers maximum per movement:

- mounted directly on the mechanical block when used with 2-contact variable composition cams,
- mounted at the extremity of the contact supports when used with 4 and 8-contact variable composition cams.

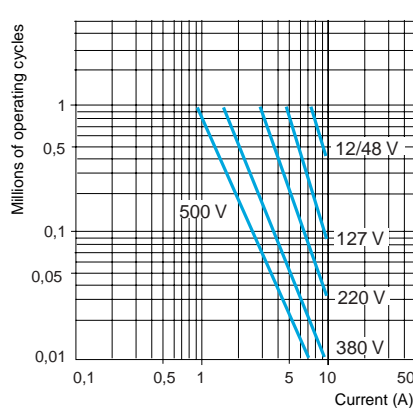
Environment			
Conformity to standards			IEC 337-1, NF C 63-140, VDE 0660 part 2
Product certifications			CSA A600, Q 600, Bureau Veritas, USSR
Protective treatment			Standard version “TC”
Ambient air temperature	For storage	°C	- 40...+ 70
	For operation	°C	- 20...+ 70
Operating position			All positions
Vibration resistance			2 gn (10 to 500 Hz) conforming to IEC 68-2-6
Shock resistance			15 gn, duration 11 ms, conforming to IEC 68-2-27
Electric shock protection			Class I, conforming to IEC 536 and NF C 20-030
Maximum operating lever force required in each direction		daN	Notched positions, with stayput operation: < 1.5 Notched or unnotched positions, with spring return to zero operation: < 3.5
Degree of protection			IP 54 conforming to IEC 529 (unit with simple handle mounted in dust and damp proof enclosure)
Mechanical durability	In millions of operating cycles		XKD F : 3 in each direction
Weight	XKD F	kg	Mechanical block: 0.950 4-contact assembly: 0.350 8-contact assembly: 0.560

Contact block characteristics			
Type			N/C contact (ZB2 BE102)
Conventional thermal current	A		10 conforming to IEC 337-1, NF C 63-140, VDE 0660, CSA C 22-2 n° 14
Rated insulation voltage	V		≈ 500 conforming to NF C 20-040, VDE 0110, IEC 158-1
Insulation category			Group C conforming to NF C 20-040 and VDE 0110
Contact operation			Slow break, double-break contacts with positive opening operation
Resistance across terminals	mΩ		≤ 25 (in accordance with NF C 93-050, at 1 A)
Short-circuit protection			10 A cartridge fuse type gG conforming to IEC 337-1B, VDE 0660 part 2

Operational power
 Conforming to IEC 337-1
 Utilisation categories AC-11 and DC-11
 Operating rate: 3600 operating cycles/hour
 Load factor: 0.5

a.c. supply ~ 50-60 Hz
 ~ Inductive circuit

d.c. supply —



Power broken in W for 1 million operating cycles

Voltage V	24	48	120
mm	65	48	40

Connection	Captive screw clamp terminals Clamping capacity: <input type="checkbox"/> minimum 1 x 0.5 mm ² , <input type="checkbox"/> maximum, with or without cable end: 2 x 1.5 mm ² or 1 x 2.5 mm ² conforming to NF C 20-120
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Controllers

For “medium hoisting” applications, type **XKD F**
Grid for composing the reference of a controller

Reference of controller type XKD

	Lever	Handle	Movement AB			Movement CD		
			No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation
XKD F	1							
Control lever								
Standard model, length 200 mm	1							
Handle								
Simple (standard model)		1						
With zero (centre) position mechanical interlocking		2						
With zero (centre) position mechanical & electrical interlocking (1 C/O contact)		3						
“Dead man’s” type								
With N/C + N/O contact		4						
With N/O + N/O contact		5						
With built-in flush pushbutton								
With N/C + N/O contact		6						
With N/O + N/O contact		7						
With built-in projecting pushbutton								
With N/C + N/O contact		8						
With N/O + N/O contact		9						
Movement AB								
Number of 2-contact blocks								
0 blocks			0					
1 block			1					
2 blocks			2					
3 blocks			3					
4 blocks			4					
5 blocks			5					
6 blocks			6					
8 blocks			8					
Type of lever movement								
Notched positions, with stayput operation								
3 notches (1)				1				
5 notches (starting from 12°) or 6 notches (from 6°) (2) (3)				2				
Notched positions, with spring return to zero operation								
3 notches (1)				3				
5 notches (starting from 12°) or 6 notches (from 6°) (2) (3)				4				
Unnotched positions, with spring return to zero operation (4)				5				
Potentiometer adaptation								
Without adaptation nor potentiometer					0			
With adaptation only (without potentiometer)					1			
With adaptation + potentiometer (5)					2			
Movement CD								
Number of 2-contact blocks								
0 blocks						0		
1 block						1		
2 blocks						2		
3 blocks						3		
4 blocks						4		
5 blocks						5		
6 blocks						6		
8 blocks						8		
Type of lever movement								
Notched positions, with stayput operation								
3 notches (1)							1	
5 notches (starting from 12°) or 6 notches (starting from 6°) (2) (3)							2	
Notched positions, with spring return to zero operation								
3 notches (1)							3	
5 notches (starting from 12°) or 6 notches (starting from 6°) (2) (3)							4	
Unnotched positions, with spring return to zero operation (4)							5	
Potentiometer adaptation								
Without adaptation nor potentiometer								0
With adaptation only (6) (without potentiometer)								1
With adaptation (6) + potentiometer (5)								2

(1) 3 notches: restricted to 2-contact variable composition cams only.

(2) 5 notches: by using 1 or 2 variable composition 4 or 8-contact cams. 1st mechanical notch at 12° (6 electrical positions in each direction).

(3) It is possible to obtain 6 mechanical notches, 1st mechanical notch at 6° (6 electrical positions in each direction). Please consult your Regional Sales office.

(4) Type of lever operation recommended when using a potentiometer.

(5) Potentiometer type and value to be stated on the Order form, see pages 44 and 45.

(6) It is possible to obtain 6 mechanical notches, 1st mechanical notch at 6° (6 electrical positions in each direction). Please consult your Regional Sales office.

Order form

(specimen suitable for photocopying)

Controllers

For "medium hoisting" applications, type **XKD F** Controllers with variable composition schemes, factory assembled

See example on page 23

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 20)

Lever	Handle	Movement AB			Movement CD		
		No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation

Number of identical units **XKD F**

For Schneider Electric Industries use only

Order N°	Item N°	MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
XKD	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Lever gate
Sketch and crosshatch the lever's field of movement on the grid

Movement CD
Adaptation Potentiometer

Drum n°2

Potentiometer adaptation
Cross the position on the scheme
On movement AB
Type/size: _____
Value: _____
On movement CD
Type/size: _____
Value: _____

Drum n°3

Movement AB
Adaptation Potentiometer

Text: **Direction A** Ex: 5 notches
36° 30' 24' 18' 12' 6' | 12° 18' 24' 30' 36'

Text: **Direction B** Ex: 3 notches
12° 24' 36'

Text: **Direction C** Ex: 6 notches
6° 12' 18' 24' 30' 36'

Text: **Direction D** Ex: 6 notches
6° 12' 18' 24' 30' 36'

Drum n°1

Movement AB
Adaptation Potentiometer

Choice of cam carriers
(1) Cross the type of cam carrier required:
(a): 3 notch cam carrier, 2 contacts max.,
(b): 5 notch cam carrier, 4 contacts max.,
(c): 5 notch cam carrier, 8 contacts max.
(2) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

Contact at lever base

Item (2)

Drum n°4

Movement CD
Adaptation Potentiometer

Legend

Without legend

Blank legend **XKB Y1**

Legend with specific engraving, **XKD Y1001** (clearly state text on this scheme)

Left-hand operated unit

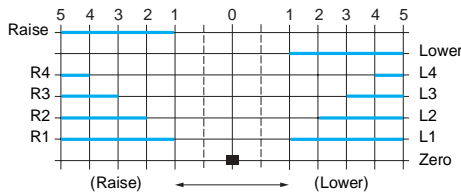
Right-hand operated unit

- Electrical overlapping of contacts is not possible between the 5th and 6th notches.
- Spring return operation: 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

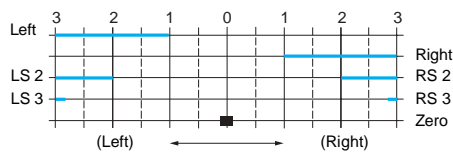
Requirement

A 2 movement controller: “hoist-traverse”.
“Cross” type lever gate. Controller conforming to NF E 52-070.
No potentiometer adaptation on movements AB or CD.

Scheme for movement AB “hoist”



Scheme for movement CD “traverse”



Notes:

Movement AB

The scheme for movement AB requires 7 contacts, therefore, select 4 blocks of 2 contacts.
The only alternative is the selection of either drum n° 3 or n° 1, depending on the available space.

Movement CD

The space between each notch indicated on the 3 position scheme cannot be adhered to.
Effectively, to obtain 5 contacts, a 2-contact block can be selected (drum n° 2), which does not increase the size of the base, together with 2 x 2-contact blocks (drum n° 4).
The lever gate will limit the lever travel to 3 notches.

Composition of the reference (see page 20)

	XKD F	1	2	4	4	0	3	4	0
Control lever Standard, length 200 mm		1							
Handle With zero (centre) position mechanical interlocking			2						
Movement AB “hoist”									
Number of 2-contact blocks				4					
Type of lever movement					4				
Potentiometer adaptation Without adaptation nor potentiometer						0			
Movement CD “traverse”									
Number of 2-contact blocks							3		
Type of lever movement								4	
Potentiometer adaptation Without adaptation nor potentiometer									0

Controllers

For "medium hoisting" applications, type **XKD F**
Ordering form completion example

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 20)

	Lever	Handle	Movement AB			Movement CD			
	No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation

Number of identical units

1 **XKD F** 1 2 4 4 0 3 4 0

For Schneider Electric Industries use only

Order N°	Item N°	MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
		XKD											

Scheme: viewed from above

Lever gate
Sketch and crosshatch the lever's field of movement on the grid

Movement CD
Adaptation Potentiometer

Drum n°2

Choice of cam carriers (1)

Potentiometer adaptation
Cross the position on the scheme

On movement AB
Type/size: _____
Value: _____

On movement CD
Type/size: _____
Value: _____

Drum n°3

Item (2)

Zero 4 3 2 1 LOWER RAISE

Choice of cam carriers (1)

Text: LOWER Direction A Ex: 5 notches

Text: RAISE Direction B Ex: 3 notches

Direction D 0 Direction C

Direction B 0 Direction A

Drum n°1

Item (2)

Choice of cam carriers (1)

Choice of cam carriers

(1) Cross the type of cam carrier required:
(a): 3 notch cam carrier, 2 contacts max..
(b): 5 notch cam carrier, 4 contacts max..
(c): 5 notch cam carrier, 8 contacts max..

(2) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

Contact at lever base
NC 51-52
NO K1-K2

Drum n°4

52 53 Zero

Choice of cam carriers (1)

Legend

Without legend

Blank legend **XKB Y1**

Legend with specific engraving, **XKD Y1001** (clearly state text on this scheme)

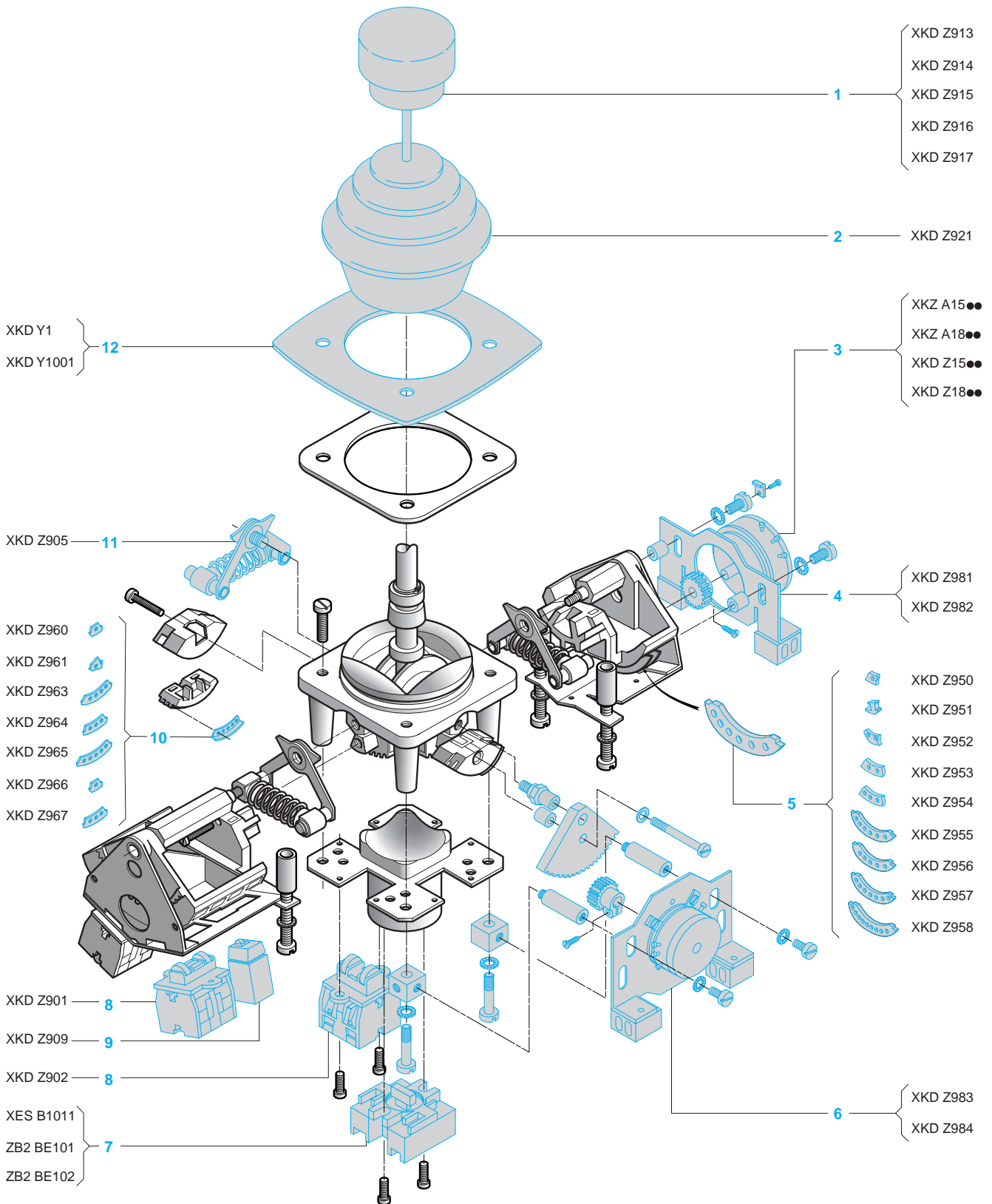
Left-hand operated unit

Right-hand operated unit

- Electrical overlapping of contacts is not possible between the 5th and 6th notches.
- Spring return operation: 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

Controllers

For "medium hoisting" applications, type **XKD F**
Separate components

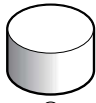


Controllers

For “medium hoisting” applications, type **XKD F**
Separate components



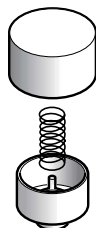
XKD Z913



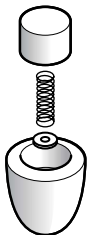
XKD Z914



XKD Z915



XKD Z916



XKD Z917

Description	Item	Characteristics	Unit reference	Weight kg
Bellows	2	Bellows + 1 flat seal	XKD Z921	0.075
Handles △ Not interchangeable between different models	1	Simple	XKD Z913	0.060
		With zero (centre) position interlocking	XKD Z914	0.035
		“Dead man’s” type	XKD Z915	0.040
		With built-in flush pushbutton	XKD Z916	0.050
		With built-in projecting pushbutton	XKD Z917	0.050
Spring return operation mechanism Sold in lots of 2	11	Spring return to zero mechanism	XKD Z905	0.100
Notched operation mechanism	9	Position notching mechanism for variable composition cams	XKD Z909	0.010
Variable composition cams for support with 4 or 8 contacts Sold in lots of 50	5	Pass cam	XKD Z950	0.005
		Complementary, 1 position	XKD Z951	0.005
		Complementary, 1.5 position	XKD Z952	0.010
		Complementary, 2 positions	XKD Z953	0.010
		Complementary, 3 positions	XKD Z954	0.020
		Complementary, 6 positions	XKD Z955	0.035
		5 positions	XKD Z956	0.030
		7 positions	XKD Z957	0.040
		9 positions	XKD Z958	0.050
Variable composition cams for support with 2 contacts Sold in lots of 20	10	Complementary, half-position	XKD Z960	0.005
		Complementary, 1 position	XKD Z961	0.005
		Reversing, for notches 1+ 2 + 3	XKD Z963	0.020
		Acceleration, for notches 2 + 3	XKD Z964	0.005
		Acceleration, for notch 3	XKD Z965	0.010
		Pass cam	XKD Z966	0.010
		Cam for zero position contact	XKD Z967	0.010
Scheme contacts	8	2 x ZB2 BE102 contacts mounted on baseplate	Without marker XKD Z901 With marker XKD Z902	0.050 0.050
Zero (centre) position electrical interlocking C/O contact	7	Snap action	XES B1011	0.030
Contacts for “Dead man’s” handle or handle with built-in pushbutton	7	Slow break	N/C, positive opening ZB2 BE102 N/O ZB2 BE101	0.015 0.015
Legends	12	Blank	XKD Y1	0.035
		With specific engraved text	XKD Y1001	0.035
Potentiometer adaptation kits (1)	4	On end of contact supports	Size 15 XKD Z981 Size 18 XKD Z982	0.120 0.130
	6	Directly on mechanical block	Size 15 XKD Z983 Size 18 XKD Z984	0.120 0.130
Potentiometers for controllers XKD	3	–	XKZ A15●●, A18●● XKD Z15●●, Z18●● See pages 44 and 45	–

(1) Including 15 tooth pinion.

□ The maximum lever travel of 36° per direction corresponds to a potentiometer shaft rotation of 168°.

□ Levers with friction drive facility are available under certain conditions. Please consult your Regional Sales Office.

109237_33_M



XKM A

109232_37_M



XKM B

109233_38_M



XKM C

Extremely robust and fully configurable units designed to control “heavy hoisting” equipment.

Mainly for use on fixed control stations or seated controller desks type **XJC**.

3 different controller models:

- **XKM A**: with variable composition schemes, multidirectional control of 2 movements by central lever.
- **XKM B**: with variable composition schemes, control of 1 movement by central lever.
- **XKM C**: with variable composition schemes, control of 1 movement by side lever.

Control lever

XKM A and **XKM B**: length: 200 or 250 mm. Travel in each direction: 36° max.

XKM C: side lever, length 240 mm. Travel in each direction: 54° maximum.

Lever gate

XKM A: universal or specific (must be specified on Order form).

XKM B and **XKM C**: no lever gate.

End stops

Removable, attached to mechanical block to limit lever travel in 6° steps.

Handle

XKM A and **XKM B**; 5 versions:

- Simple handle.
 - Handle with zero (centre) position mechanical interlock.
 - Handle with zero (centre) position mechanical interlock + 1 C/O snap action contact.
 - “Dead man’s” handle with 1 C/O snap action contact.
 - Handle with built-in flush or projecting pushbutton + 1 C/O snap action contact.
- XKM C**: simple handle.

Electrical positions

XKM A and **XKM B**: 6 positions maximum in each direction.

XKM C: 9 positions maximum in each direction.

Type of lever movement

■ **Notched positions, with stayput operation.**

XKM A and **XKM B**; 2 versions:

- 6 notch sector in each direction: 6°, 12°, 18°, 24°, 30°, 36°.
- 5 notch sector in each direction: 12°, 18°, 24°, 30°, 36°.

Note: two different notching forces: Normal: operating lever force: 2 daN. Increased: operating lever force: 4 daN (for 4 simultaneously operated contacts).

XKM C, 2 versions:

- 9 notch sector maximum in each direction: 6°, 12°, 18°, 24°, 30°, 36°, 42°, 48°, 54°.
- 8 notch sector maximum in each direction: 12°, 18°, 24°, 30°, 36°, 42°, 48°, 54°.

■ **Notched positions, with spring return to zero operation.**

XKM A, B and C, 2 versions:

- 6 notches maximum in each direction: 6°, 12°, 18°, 24°, 30°, 36°.
- 5 notches maximum in each direction: 12°, 18°, 24°, 30°, 36°.
- △ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts maximum at each subsequent notch.

■ **Unnotched positions, with spring return to zero operation:**

XKM A, B and C: 36° maximum travel in each direction.

△ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts maximum at each subsequent 6° position.

Contacts

24 contacts maximum per movement (2 x 3 blocks of 4 contacts).

2 versions:

- Standard, double-break contacts.
- Double-break contacts with magnetic blow-out.

Cam schemes

24 cams maximum per movement (12 contacts on each side), mounted in groups of 4.

Warning: for technical reasons relating to mounting, the first cam (for contact 13-14) must be a reversing or zero position cam.

Legends

1 for each direction, interchangeable without dismantling the unit.

Material: anodised aluminium, anodic oxidation marking.

Standard markings: FORWARD, REVERSE, RAISE, LOWER, LEFT, RIGHT.

Other markings: to be stated on Order form.

Potentiometer adaptation

2 potentiometers maximum per movement.

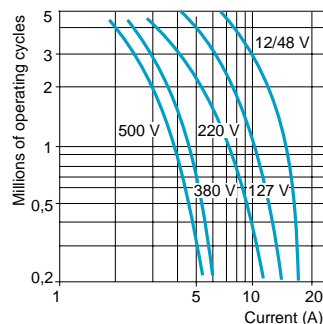
Potentiometers mounted at the extremity of the contact supports or directly onto the faces of the mechanical block.

Environment			
Conformity to standards			IEC 337-1, NF C 63-140, VDE 0660 part 2, CSA C 22-2 n° 14
Product certifications			CSA 600 V max. (≈) “heavy duty”, USSR
Protective treatment			Standard version “TC”
Ambient air temperature	For storage	°C	- 40...+ 70 °C
	For operation	°C	- 10...+ 70 °C
Operating position			All positions
Vibration resistance	Conforming to IEC 68-2-6		2 gn (10 to 500 Hz)
Shock resistance	Conforming to IEC 68-2-27		Direction of shocks on vertical axis: 15 gn Direction of shocks on horizontal and transversal axes: 100 gn
Electric shock protection	Conforming to IEC 536 and NF C 20-030		Class I
Maximum operating lever force required in each direction		daN	< 4 for 4 simultaneously actuated contacts (to 1 st notch) < 4.5 for 4 simultaneously actuated contacts for spring return to zero version (maintained against end stop)
Degree of protection	Conforming to IEC 529		IP 54 (unit with simple handle mounted in dust and damp proof enclosure)
Mechanical durability (in millions of operating cycles)			4 in each direction (mechanical control device)
Weight		kg	XKM A: mechanical block: 4.6. 4-contact assembly: 0.7 XKM B: mechanical block: 3. 4-contact assembly: 0.7 XKM C: mechanical block: 3.7. 4-contact assembly: 0.7

Contact block characteristics			
Type			Block of 4 double-break contacts
Conventional thermal current	A		20 conforming to IEC 337-1, NF C 63-140, VDE 0660
Rated insulation voltage	V		≈ 500 conforming to NF C 20-040, VDE 0110, IEC 158-1; 600 V conforming to CSA C 22-2 n° 14
Insulation category			Group C conforming to NF C 20-040 and VDE 0110
Contact operation			Slow break, double-break contacts with positive opening operation 2 versions: standard or with magnetic blow-out
Resistance across terminals	mΩ		≤ 25 (in accordance with NF C 93-050, at 1 A)
Terminal referencing			Conforming to CENELEC EN 50013
Short-circuit protection			20 A cartridge fuse type gG conforming to IEC 337-1B, VDE 0660 part 2

Operational power
Conforming to IEC 337-1
Utilisation categories AC-11 and DC-11
Operating rate: 3600 operating cycles/hour
Load factor: 0.5

Standard double-break contact block
a.c. supply ~ 50-60 Hz
~ Inductive circuit



d.c. supply ≡

Power broken in W for 3 million operating cycles

Voltage V	24	48	120
~	70	75	75

Double-break contact block with magnetic blow-out.

d.c. supply ≡

Power broken in W for 3 million operating cycles

Voltage V	24	48	120
~	90	100	100

Connection	Captive screw clamp terminals Clamping capacity: □ minimum: 1.5 mm ² , □ maximum: 2 x 2.5 mm ² with cable end
-------------------	--

Controllers

For “heavy hoisting” applications, type **XKM**
Grid for composing the reference of a controller XKM A or XKM B

Reference of a controller type XKM A or XKM B

	Model	Lever	Handle	Contacts	Movement AB			Movement CD (XKM A only)		
					No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation
XKM	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Model										
2 movement controller (AB + CD)	A									
1 movement controller (AB)	B									
Control lever										
Short: length 200 mm (standard)		1								
Long: length 250 mm		2								
Handle										
Simple (standard model)			1							
With zero (centre) position mechanical interlocking			2							
With zero (centre) position mechanical & electrical interlocking (1 C/O contact)			3							
“Dead man’s” type (1 C/O contact)			4							
With built-in flush pushbutton (1 C/O contact)			5							
With built-in projecting pushbutton (1 C/O contact)			6							
Type of contacts										
Block of 4 double-break contacts (standard model)				1						
Block of 4 double-break contacts with magnetic blow-out				2						
Movement AB										
Number of 4-contact blocks										
					0 blocks					0
					1 block					1
					2 blocks					2
					3 blocks					3
					4 blocks					4
					5 blocks					5
					6 blocks					6
Type of lever movement										
Notched positions, with stayput operation	5 notches (1)	Normal lever force								1
		Increased lever force								2
	6 notches (2)	Normal lever force								3
		Increased lever force								4
Notched positions, with spring return to zero operation	5 notches (1)									5
	6 notches (2)									6
Unnotched positions, with spring return to zero operation (3)										7
Potentiometer adaptation										
Without potentiometer support plate, or potentiometer										0
With potentiometer support plate only (4) (potentiometer not included)										1
With potentiometer support plate + potentiometer (5)										2
Movement CD (for type XKM A only)										
Number of 4-contact blocks										
					0 blocks					0
					1 block					1
					2 blocks					2
					3 blocks					3
					4 blocks					4
					5 blocks					5
					6 blocks					6
Type of lever movement										
Notched positions, with stayput operation	5 notches (1)	Normal lever force								1
		Increased lever force								2
	6 notches (2)	Normal lever force								3
		Increased lever force								4
Notched positions, with spring return to zero operation	5 notches (1)									5
	6 notches (2)									6
Unnotched positions, with spring return to zero operation (3)										7
Potentiometer adaptation										
Without adaptation nor potentiometer										0
With adaptation only (without potentiometer)										1
With adaptation + potentiometer (5)										2

(1) 5 mechanical notches (1st notch at 12°) (6 electrical positions in each direction). (2) 6 mechanical notches (1st notch at 6°) (6 electrical positions in each direction). (3) Type of lever operation recommended when using a potentiometer. (4) Adaptation including 15 tooth pinion. (5) Potentiometer type and value to be stated on the Order form, see pages 44 and 45.

Controllers

For "heavy hoisting" applications, type **XKM**
Controllers XKM A and XKM B with variable
composition schemes, factory assembled

See example on page 31

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 28)

Model	Lever	Handle	Type of contact	Movement AB			Movement CD (XKM A only)		
				No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation

Number of identical units **XKM**

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Order N°	Item N°	MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
		XKM	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Scheme: viewed from above

Lever gate

Sketch and crosshatch the lever's field of movement on the grid

Movement CD (XKM A only)

Adaptation Potentiometer

Drum n°2

Potentiometer adaptation

Cross the position on the scheme

On movement AB

Type/size: _____

Value: _____

On movement CD

Type/size: _____

Value: _____

Drum n°3

Adaptation Potentiometer

Movement AB

Adaptation Potentiometer

Drum n°1

Adaptation Potentiometer

Choice of cam carriers

(1) The 1st cam must either be a zero position cam or a reversing cam.

Zero position cam Or Reversing cam

(2) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

Contact at lever base

Item (2)

Drum n°4

Adaptation Potentiometer

Movement CD (XKM A only)

Legend (1 for each direction)

Without legend

Blank legend **XKM Y1**

Legend with specific engraving (clearly state text on this scheme)

Left-hand operated unit

Right-hand operated unit

Legend with standard text (see page 39)

Left-hand operated unit

Right-hand operated unit

△ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

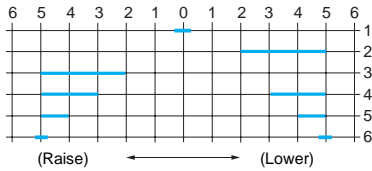
Requirement

A 2 movement controller: “hoist-long travel”.

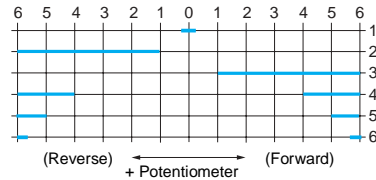
Universal lever gate, limited to 4 notches on the “raise” and “lower” directions (1st notch at 12°).

Potentiometer adaptation on movement CD. Potentiometer selected: 4700 Ω, size 15, standard model.

Scheme for movement AB “hoist”



Scheme for movement CD “long travel”



Notes:

Movement AB

Two installation alternatives depending on the required size:

- 2 blocks of 4 contacts, both on the same side of the mechanical block (example shown),
- 1 block of 4 contacts on either side of the mechanical block.

Movement CD

Same installation alternatives as for movement AB.

Two alternatives for potentiometer installation:

- On end of cam carriers and contact supports (example shown).
- Directly on the mechanical block.

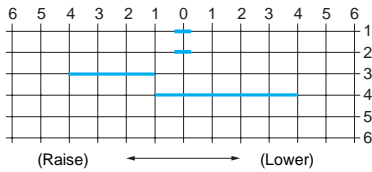
Composition of the reference (see page 28)

	XKM	A	1	4	1	2	5	0	2	7	2
Model		A									
2 movements (AB + CD)		A									
Control lever			1								
Short: length 200 mm (standard)			1								
Handle				4							
“Dead man’s” type with 1 C/O contact				4							
Type of contacts					1						
Standard double-break					1						
Movement AB											
Number of 4-contact blocks						2					
2 blocks (i.e. 8 contacts when 6 contacts required)						2					
Type of lever movement							5				
Notched positions, with spring return to zero operation and 5 notch sectors (starting from 12°)							5				
Potentiometer								0			
Without adaptation device or potentiometer								0			
Movement CD											
Number of 4-contact blocks									2		
2 blocks (i.e. 8 contacts when 6 contacts required)									2		
Type of lever movement										7	
Unnotched positions, with spring return to zero operation										7	
Potentiometer											2
With potentiometer adaptation device + size 15, 4700 Ω potentiometer											2

Requirement

A single movement controller: “hoist”.

Scheme for movement AB “hoist”



Note:

Movement AB

Two installation alternatives depending on the required size (space in the enclosure or non symmetrical installation):

- 1 to 3 blocks of 4 contacts on each side of the mechanical block,
- 1 to 3 blocks on one side only.

Composition of the reference (see page 28)

	XKM	B	1	1	1	1	6	0			
Model 1 movement controller (AB)		B									
Control lever Short: length 200 mm (standard)			1								
Handle Simple (standard model)				1							
Type of contacts Block of 4 double-break contacts (standard model)					1						
Movement AB											
Number of 4-contact blocks 1 block (i.e. 4 contacts)						1					
Type of lever movement 6 notched positions, with spring return to zero operation							6				
Potentiometer Without potentiometer support plate, or potentiometer								0			

Controllers

For "heavy hoisting" applications, type **XKM B**
Ordering form completion example

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 28)

Model	Lever	Handle	Type of contact	Movement AB			Movement CD		
				No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation

Number of identical units

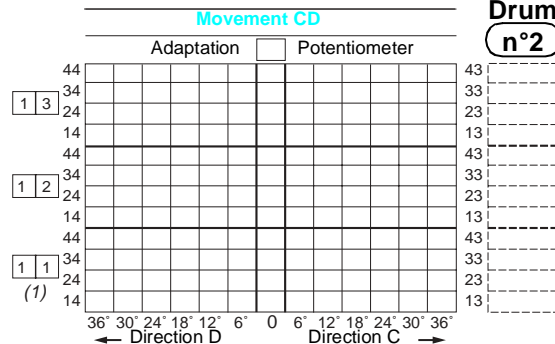
XKM

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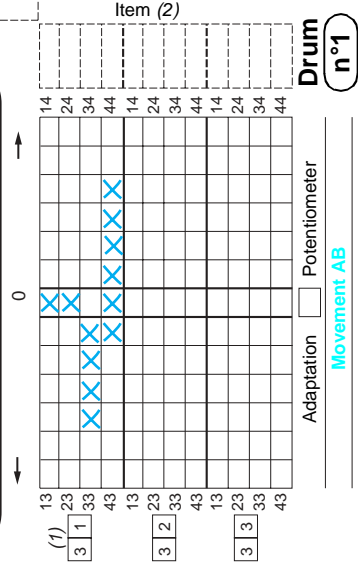
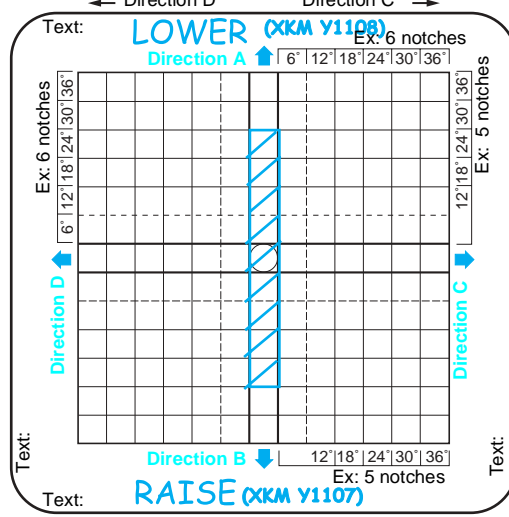
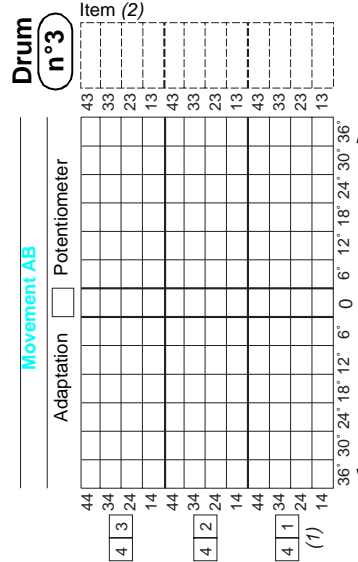
Order N°	Item N°	MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
		XKM	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Scheme: viewed from above

Lever gate
Sketch and crosshatch the lever's field of movement on the grid

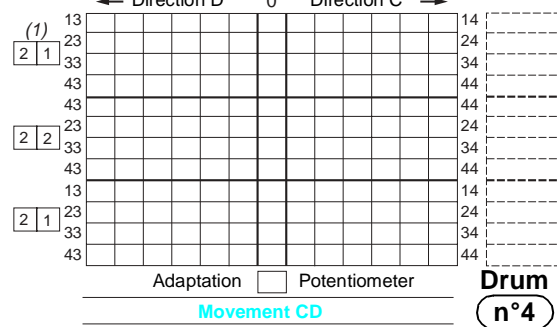


Potentiometer adaptation
Cross the position on the scheme
On movement AB
Type/size: _____
Value: _____
On movement CD
Type/size: _____
Value: **4700 Ω**



Choice of cam carriers
(1) The 1st cam must either be a zero position cam or a reversing cam.
(2) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

Contact at lever base



Legend (1 for each direction)

Without legend

Blank legend **XKM Y1**

Legend with specific engraving (clearly state text on this scheme)

Left-hand operated unit

Right-hand operated unit

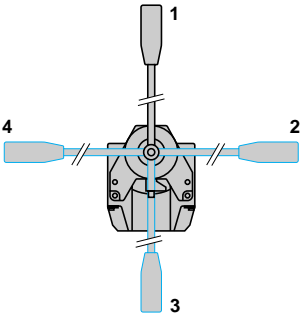
Legend with standard text (see page 39)

Left-hand operated unit

Right-hand operated unit

△ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

Reference of controller type XKM C

			Lever	Contacts	Movement AB		
					No. of blocks	Lever movement	Potentiometer adaptation
XKM C							
Control lever							
Side lever, position according to diagram below			Position 1	1			
			Position 2	2			
			Position 3	3			
			Position 4	4			
							
Type of contacts							
Block of 4 double-break contacts (standard model)				1			
Block of 4 double-break contacts with magnetic blow-out				2			
Movement AB							
Number of 4-contact blocks							
1 block					1		
2 blocks					2		
3 blocks					3		
Type of lever movement							
Notched positions, with stayput operation	5 notches (1)	Normal lever force				1	
		Increased lever force				2	
	6 notches (2)	Normal lever force				3	
		Increased lever force				4	
Notched positions, with spring return to zero operation	8 notches (1)					5	
	9 notches (2)					6	
Unnotched positions, with spring return to zero operation (3)	5 notches (1)					7	
	6 notches (2)					8	
Potentiometer adaptation							
Without adaptation nor potentiometer							0
With adaptation (4) only (without potentiometer)							1
With adaptation (4) + potentiometer (5)							2

(1) 1st mechanical notch at 12°.

(2) 1st mechanical notch at 6°.

(3) Type of lever operation recommended when using a potentiometer.

(4) Adaptation including 15 tooth pinion.

(5) Potentiometer type and value to be stated on the Order form, see page 44.

Controllers

For "heavy hoisting" applications, type **XKM C**
Controllers with variable composition schemes,
factory assembled

See example on page 36

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 34)

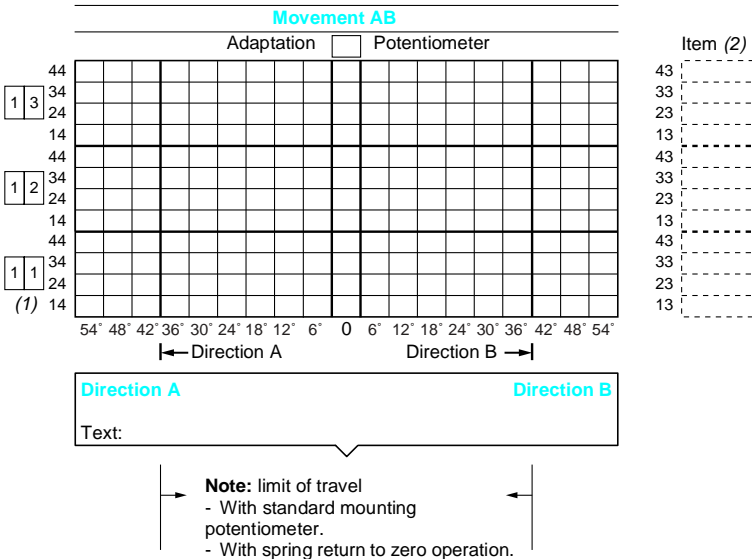
	Model	Lever	Contacts	Movement AB		Potentiometer adaptation
				Number of blocks	Lever movement	
Number of identical units	<input type="text" value="XKM"/>	<input type="text" value="C"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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Order N°	Item N°	MOD	LEV	POI	GLV	CTS	MAN	POT
		<input type="text" value="XKM"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Potentiometer adaptation	Legend
Cross <input checked="" type="checkbox"/> the required position on the scheme below.	Without legend <input type="checkbox"/>
On movement AB	Blank legend XKM CY1 <input type="checkbox"/>
Type/size:	Legend with specific engraving, XKM CY1001 (clearly state the text on the scheme below)
Value:	Left-hand operated unit <input type="checkbox"/>
	Right-hand operated unit <input type="checkbox"/>

Scheme (viewed from above)



⚠ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

(1) The 1st cam must either be a zero position cam or a reversing cam.

(2) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

Requirement

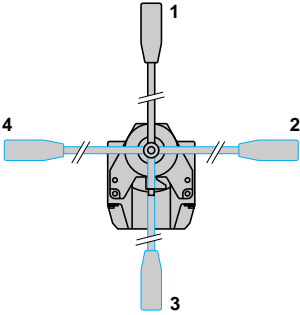
A 1 movement (AB), 2 direction controller, fitted with a vertical (upward pointing) lever.

Movement AB:

Installation of 2 blocks of 4 standard double-break contacts.

Lever movement with 6 notches at 6° intervals (1st mechanical notch at 6°), with notched cams and stayput angular positions.
No potentiometer.

Composition of the reference (see page 34)

		Lever	Contacts	Movement AB		
				No. of blocks	Lever movement	Potentiometer adaptation
XKM C		1	1	2	3	0
Control lever						
Side lever, position according to diagram below		Position 1	1			
		Position 2	2			
		Position 3	3			
		Position 4	4			
						
Type of contacts						
Block of 4 double-break contacts (standard model)			1			
Block of 4 double-break contacts with magnetic blow-out			2			
Movement AB						
Number of 4-contact blocks						
1 block				1		
2 blocks				2		
3 blocks				3		
Type of lever movement						
Notched positions, with stayput operation	5 notches (1)	Normal lever force			1	
		Increased lever force			2	
	6 notches (2)	Normal lever force			3	
		Increased lever force			4	
	8 notches (1)				5	
	9 notches (2)				6	
Notched positions, with spring return to zero operation	5 notches (1)				7	
	6 notches (2)				8	
Unnotched positions, with spring return to zero operation (3)					9	
Potentiometer adaptation						
Without adaptation nor potentiometer						0
With adaptation (4) only (without potentiometer)						1
With adaptation (4) + potentiometer (5)						2

(1) 1st mechanical notch at 12°.

(2) 1st mechanical notch at 6°.

(3) Type of lever operation recommended when using a potentiometer.

(4) Adaptation including 15 tooth pinion.

(5) Potentiometer type and value to be stated on the Order form, see page 44.

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller on page 34)

	Model	Lever	Contacts	Movement AB		Potentiometer adaptation		
				Number of blocks	Lever movement			
Number of identical units	<input type="text" value=""/>	XKM	<input type="text" value="C"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="0"/>

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Order N°	Item N°	MOD	LEV	POI	GLV	CTS	MAN	POT
		XKM	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>

Potentiometer adaptation

Cross the required position on the scheme below.

Legend

Without legend

On movement AB

Blank legend **XKM CY1**

Type/size:

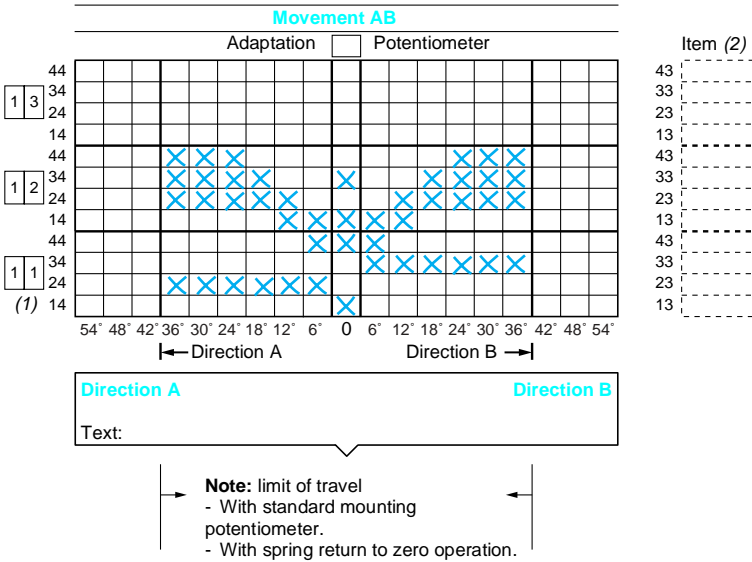
Legend with specific engraving, **XKM Y1001**
(clearly state the text on the scheme below)

Value:

Left-hand operated unit

Right-hand operated unit

Scheme (viewed from above)



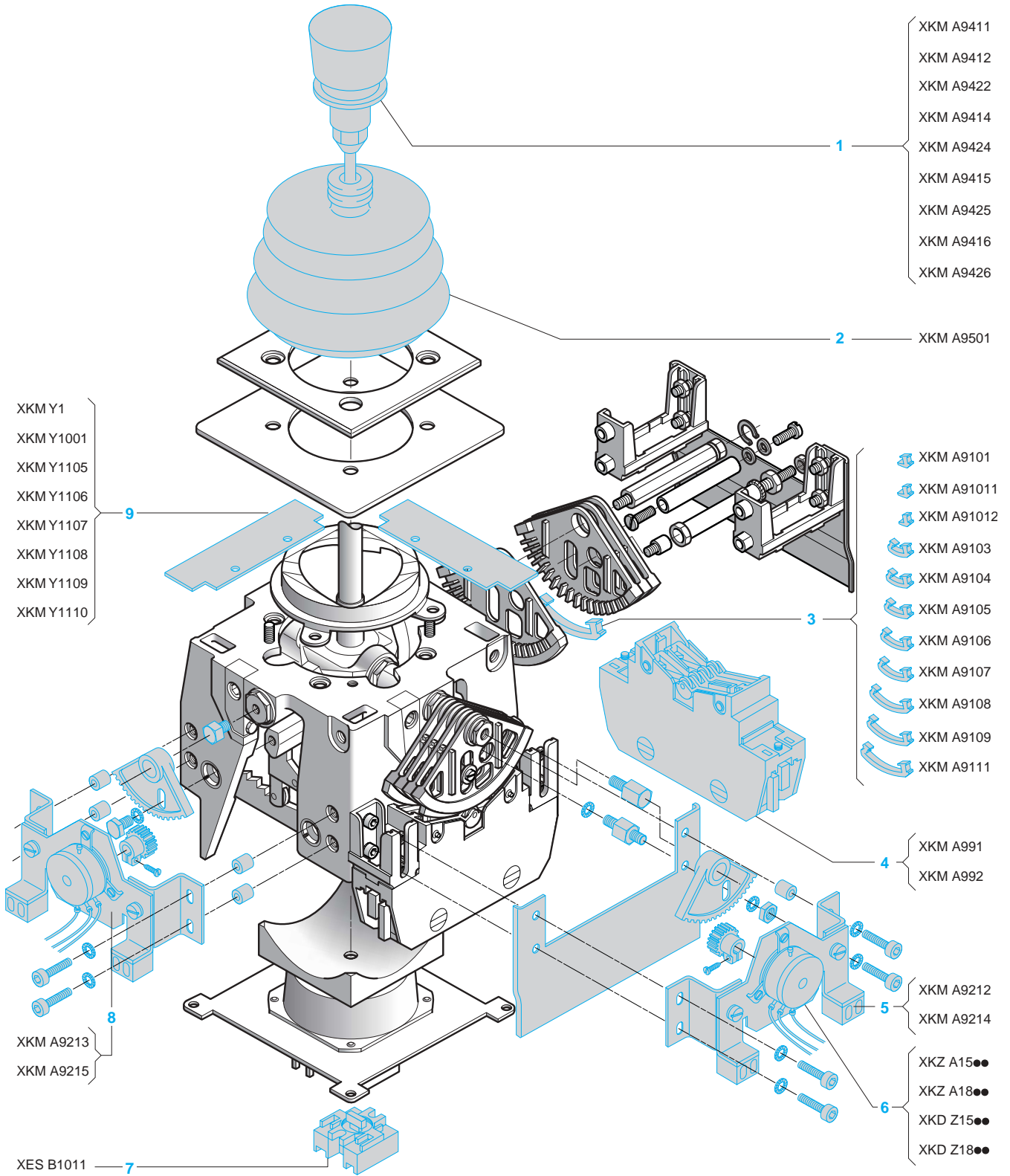
△ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

(1) The 1st cam must either be a zero position cam or a reversing cam.

(2) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

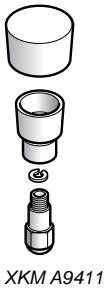
Controllers

For "heavy hoisting" applications, type **XKM**
Separate components



Controllers

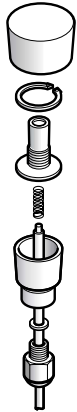
For “heavy hoisting” applications, type **XKM**
Separate components



XKM A9411



XKM A9404



XKM A9402



XKM A9405



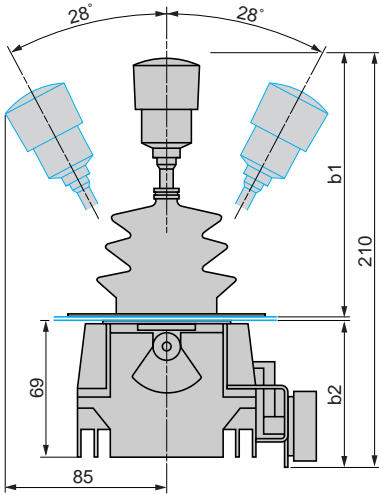
XKM A9406

Description	Item	Characteristics	Unit reference	Weight kg	
Bellows	2	–	XKM A9501	0.120	
Simple handle	1	–	For short or long lever XKM A9411	0.085	
Handles + rods	1	With zero (centre) position interlocking	For short lever XKM A9414	0.145	
			For long lever XKM A9424	0.155	
	“Dead man’s” type	For short lever XKM A9412	0.150		
		For long lever XKM A9422	0.160		
	With built-in flush pushbutton	For short lever XKM A9415	0.140		
		For long lever XKM A9425	0.150		
With built-in projecting pushbutton	For short lever XKM A9416	0.140			
	For long lever XKM A9426	0.150			
Variable composition cams <i>Sold in lots of 50</i>	3	Pass cam	XKM A9101	0.115	
		Complementary	XKM A91011	0.120	
		Overlapping	XKM A91012	0.105	
		3 positions	XKM A9103	0.205	
		4 positions	XKM A9104	0.245	
		5 positions	XKM A9105	0.370	
		6 positions	XKM A9106	0.400	
		7 positions	XKM A9107	0.430	
		8 positions	XKM A9108	0.460	
		9 positions	XKM A9109	0.505	
		11 positions	XKM A9111	0.560	
Blocks of 4 contacts	4	Double-break	XKM A991	0.310	
		Double-break with magnetic blow-out	XKM A992	0.335	
Contact at lever base	7	1 C/O snap action	YES B1011	0.030	
Legends	9	Blank	XKM Y1	0.010	
		With specific engraving (specify text when ordering)	XKM Y1001	0.010	
		With standard text	Forward	XKM Y1105	0.010
			Reverse	XKM Y1106	0.010
		Raise	XKM Y1107	0.010	
		Lower	XKM Y1108	0.010	
Left	XKM Y1109	0.010			
Right	XKM Y1110	0.010			
Potentiometer adaptation kits (1)	5	On end of contact supports	Size 15	XKM A9214	0.120
			Size 18	XKM A9212	0.130
	8	Directly on mechanical block	Size 15	XKM A9215	0.120
			Size 18	XKM A9213	0.130
Potentiometers for controllers XKM A, XKM B, XKM C	6	–	XKZ A15●●, A18●● XKD Z15●●, Z18●● See pages 44 and 45	–	

(1) Including 15 tooth pinion.

- The maximum lever travel of 36° per direction corresponds to a potentiometer shaft rotation of 168°.
- Levers with friction drive facility are available under certain conditions. Please consult your Regional Sales Office.

XKB A, XKB E

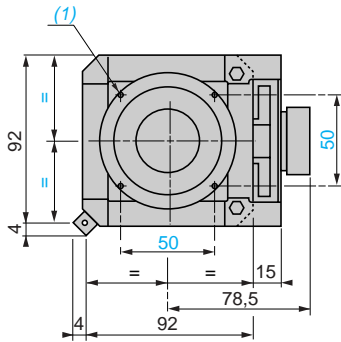


		b1	b2
XKB A,	with size 15 (3 W) potentiometer	129...134	75
XKB E	with size 18 (4 W) potentiometer	129...134	80

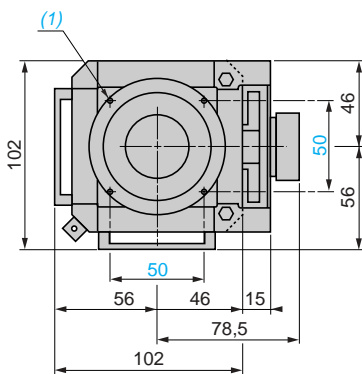
(1) Fixing by 4 M5 screws.

Note: the size 18 potentiometer adaptation on an XKB controller prevents it from being mounted in an XJP controller station.

4-contact block

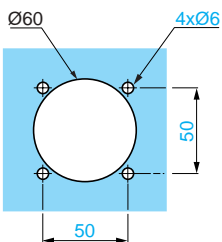


4-contact block + 1 zero position contact

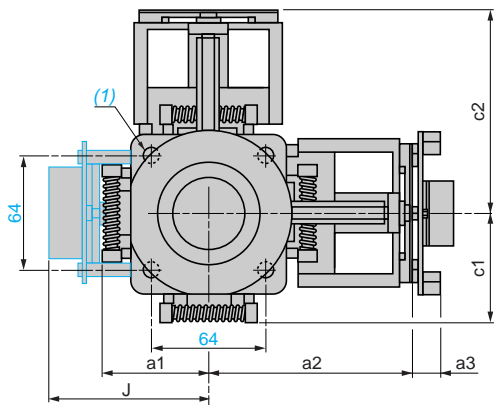
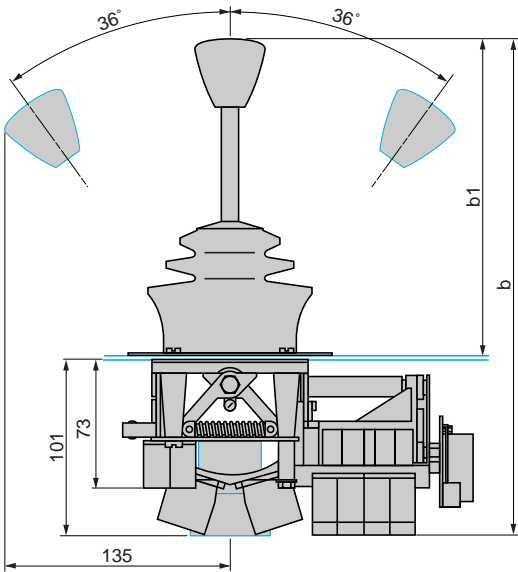


Panel cut-out

thickness 1 to 6 mm



XKD F



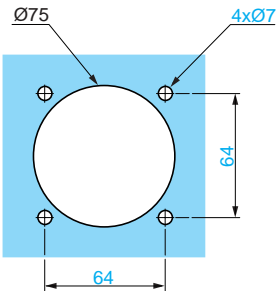
	b	b1
XKD F with short lever	288	181...186
with long lever	338	236...241

	a1	a2	c1	c2
XKD F with 2 contacts	52	-	52	-
with 2 contacts + spring return to zero	65	-	65	-
with 4 contacts	-	90	-	90
with 8 contacts	-	120	-	120

	J	a3
Adaptation for potentiometer		
size 15 (3 W)	83.5	24.5
size 18 (4 W)	85.5	26.5

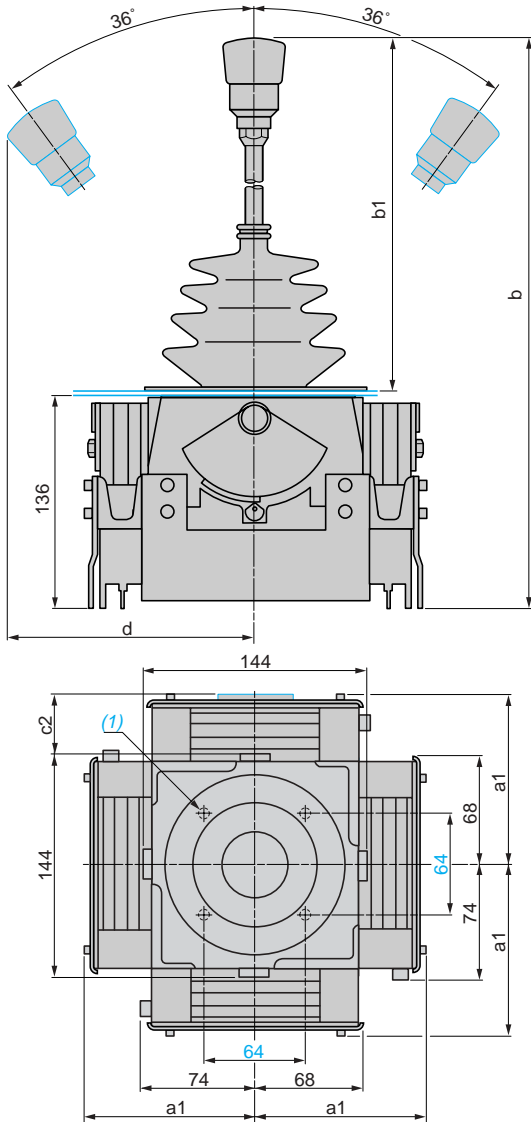
Panel cut-out

thickness 1 to 6 mm

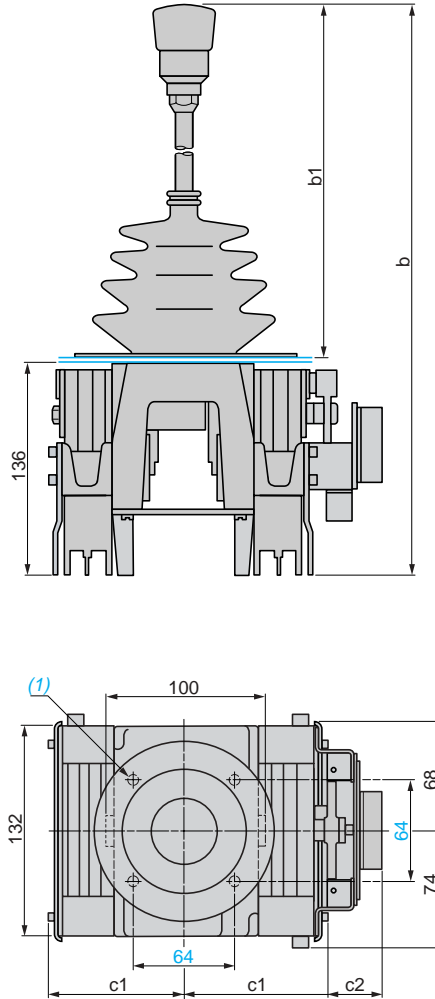


(1) Fixing by 4 M6 screws.

XKM A



XKM B



		b	b1	d
XKM A, XKM B	with short lever	322	180 to 185	125
	with long lever	392	230 to 235	125

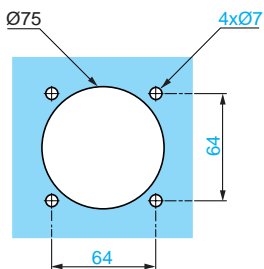
		c2
Adaptation for potentiometer	size 15 (3 W)	37.5
	size 18 (4 W)	44.5

		a1	c1
XKM A, XKM B	with 4 contacts	110	88
	with 8 contacts	140	118
	with 12 contacts	170	148

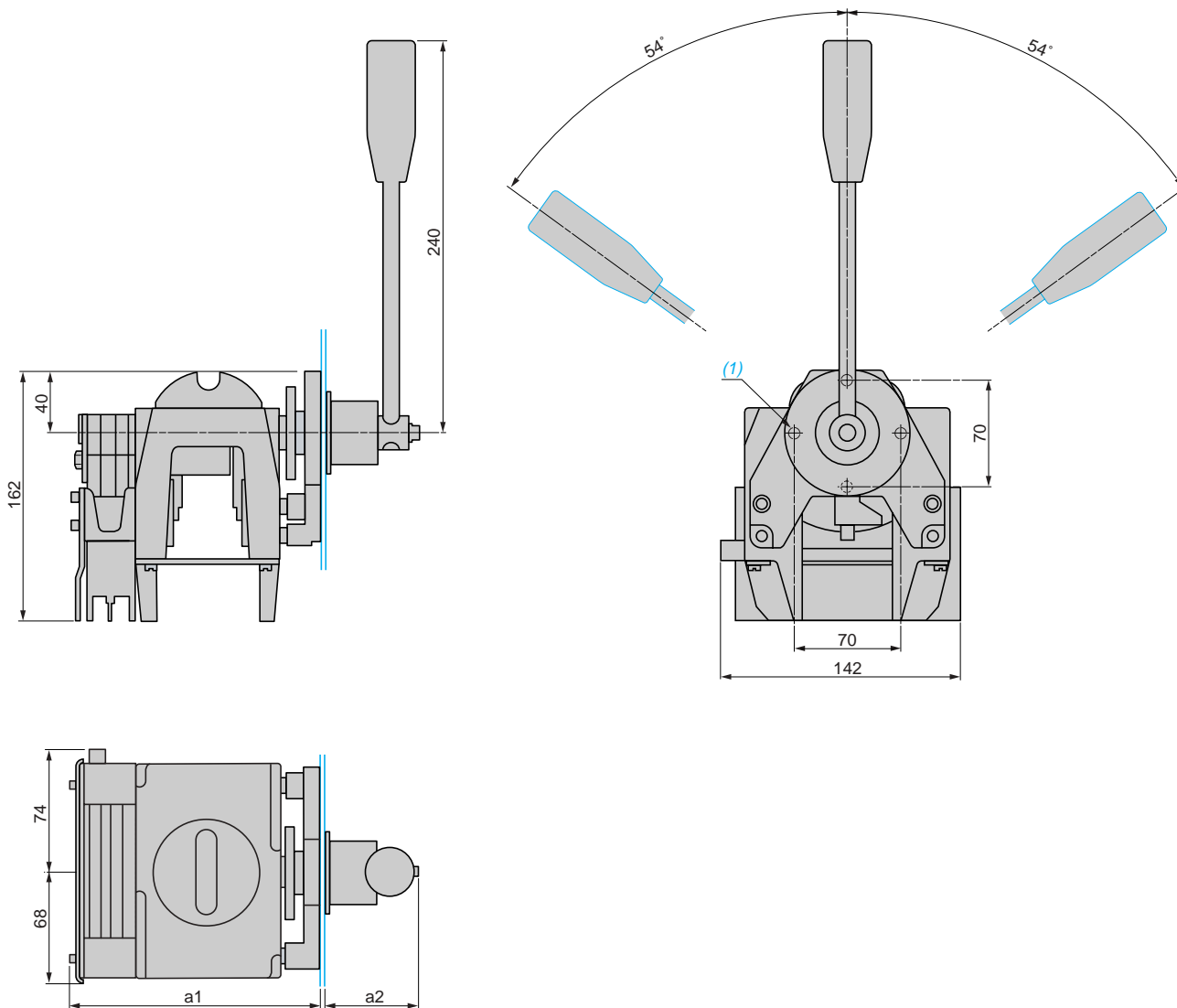
(1) Fixing by 4 M6 screws.

Panel cut-out

thickness 1 to 6 mm



XKM C

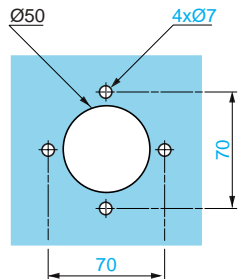


		a1	a2
XKM C	with 4 contacts	157	36 to 41
	with 8 contacts	187	36 to 41
	with 12 contacts	217	36 to 41

(1) Fixing by 4 M6 screws.

Panel cut-out

thickness 1 to 6 mm



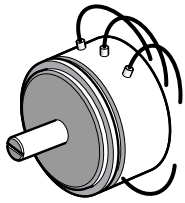
Mechanical characteristics

Potentiometer type	XKZ A15●●●	XKZ A18●●●
Size	15	18
Conformity to standards	UTE 93265	
Mounting method	By the body ("synchro" type)	
Rotational operation	Continuous	
Function	Linear (1% resolution)	
Operating angle	360°	
Mechanical durability (in millions of operating cycles)	3	1

Electrical characteristics

Centre tap	Wired out to terminal	
Dead zone around centre tap point (neutral zone)	2° ± 1°	
Nominal power (Pn)	3 W at 85 °C	4 W at 85 °C
Connections	Flying leads from soldered standard tags	

References

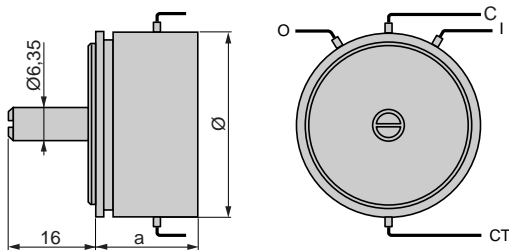


XKZ A●●●●

Resistance value Ω	Availability	Size	Reference	Weight kg
4700 (2 x 2350)	Stock item	15	XKZ A15047	0.060
	Short delivery	18	XKZ A18047	0.060
1000 (2 x 500)	Short delivery	15	XKZ A15010	0.060
	On demand	18	XKZ A18010	0.060
2200 (2 x 1100)	Short delivery	15	XKZ A15022	0.060
	On demand	18	XKZ A18022	0.060
10,000 (2 x 5000)	Stock item	15	XKZ A15100	0.060
	On demand	18	XKZ A18100	0.060
Other values	On demand	15	XKZ A15000 (1)	0.060
	On demand	18	XKZ A18000 (1)	0.060

(1) When ordering an XKZ A15000 or XKZ A18000, the total resistance value must be stated. The other characteristics are the same.

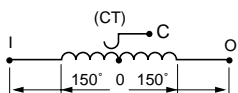
Dimensions



The pinion included with the adaptation simply clamps onto the potentiometer operating shaft (diameter 6.35 mm, length 16 mm).

	a	Ø
XKZ A15●●●	20	36.5
XKZ A18●●●	27	44.45

Connection



- I = yellow
- O = green
- C = red
- CT = black

Potentiometers for controllers

For applications requiring an extended “neutral zone”, types **XKB Z** and **XKD Z**

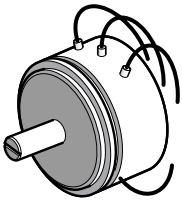
Mechanical characteristics

Potentiometer type	XKB Z15●●, XKD Z15●●	XKB Z18●●, XKD Z18●●
Size	15	18
Conformity to standards	UTE 93265	
Mounting method	By the body (“synchro” type)	
Rotational operation	Continuous	
Function	Linear (1% resolution)	
Operating angle	360°	
Mechanical durability (in millions of operating cycles)	3	1

Electrical characteristics

Centre tap	Wired out to terminal	
Dead zone around centre tap point (neutral zone)	40°, mainly for use with controllers XKB 30°, mainly for use with controllers XKD and XKM	
Nominal power (Pn)	3 W at 85 °C	4 W at 85 °C
Connections	Flying leads from soldered standard tags	

References



XKB Z1●●●, XKD Z1●●●

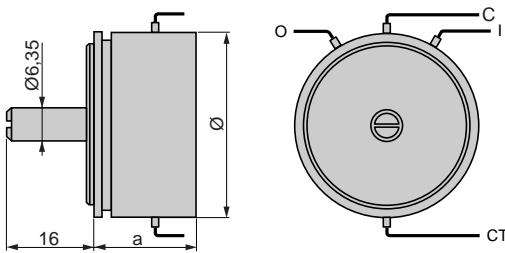
Potentiometers for controllers XKB

Resistance value Ω	Availability	Size	Reference	Weight kg
4700 (2 x 2350)	On demand	15	XKB Z1547	0.055
	On demand	18	XKB Z1847	0.065
800 (2 x 400)	On demand	15	XKB Z1508	0.055
	On demand	18	XKB Z1808	0.065

Potentiometers for controllers XKD and XKM

4700 (2 x 2350)	Stock item	15	XKD Z1547	0.055
	On demand	18	XKD Z1847	0.065
800 (2 x 400)	On demand	15	XKD Z1508	0.055
	On demand	18	XKD Z1808	0.065

Dimensions

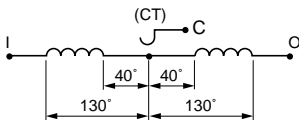


The pinion included with the adaptation simply clamps onto the potentiometer operating shaft (diameter 6.35 mm, length 16 mm).

	a	∅
XKB Z15●●, XKD Z15●●	20	36.5
XKB Z18●●, XKD Z18●●	27	44.45

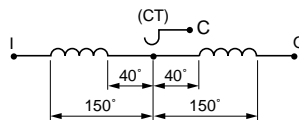
Connection

XKB Z15●●, XKB Z18●●

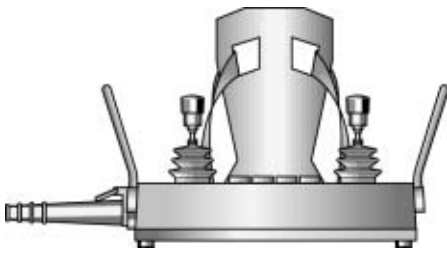


I = yellow
O = green
C = red
CT = black

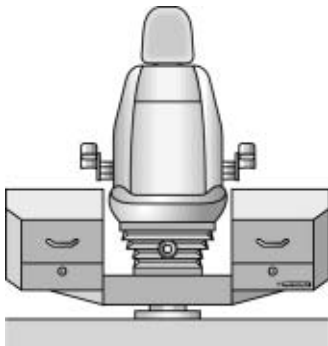
XKD Z15●●, XKD Z18●●



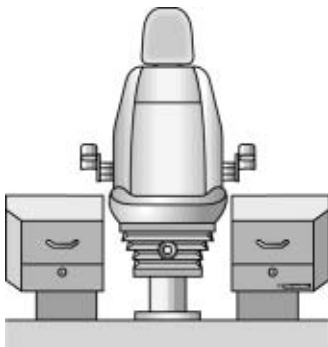
I = yellow
O = green
C = red
CT = black



Portable controller station type XJP A



Rotating controller desk type XJC D



Fixed controller desk type XJC C or E

Presentation

The control devices being used in hoisting equipment have played a major role in their rapid development. Increased speeds, acceleration and deceleration have considerably improved the performance and capabilities of hoisting equipment, but it is important to ensure that this advancement does not effect the safety of persons or material by reducing to a minimum the effort required by the operator, in order to avoid fatigue.

It is therefore essential that the operator not only has controllers that are easy to operate, accurate and robust enough for intensive duty hoisting applications (types XKB, XKD and XKM) but also, that these controllers are located in a zone with particularly easy access, referred to as the "comfort zone".

Scientific research regarding working conditions and the relationship between operators and their workstations has revealed that comfort is imperative and this has been taken into account in the design of the ergonomic Telemecanique controller desks type XJC (registered design).

The controller desks are available in both rotating (1) and fixed versions. For both versions, a standardised range of enclosures of various widths enables requirements to be met not only for installation in cabins of "heavy hoisting" overhead cranes, where space is not usually restricted, but also in cabins of tower cranes and public works equipment where space is often very restricted.

The various control units (controllers, wobblesticks, pushbuttons, pilot lights, indicators, etc.) are installed on standardised removable top plates, thus avoiding making cut-outs directly on the controller desk itself.

(1) For safety and ergonomic reasons (relating to stability), the rotating mechanism used is of the frictional type. However, for certain applications a roller bearing mechanism can be used on request. Please consult your Regional Sales Office.

109229-34_M



XKB A for "light hoisting" applications

109230-34



XKD F for "medium hoisting" applications

109231_33_M



XKM A for "heavy hoisting" applications

Presentation (continued)

Three types of controllers can be fitted into the stations or desks.

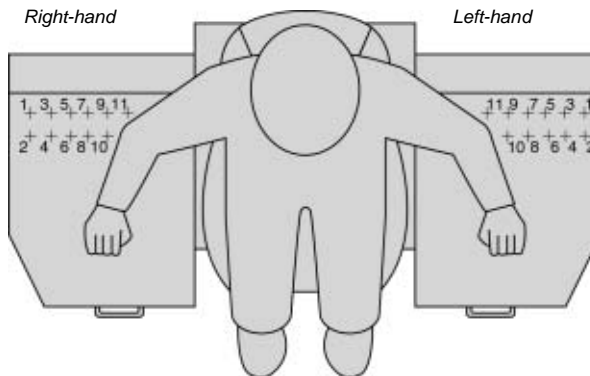
- **XKB**: controller with predefined or variable composition schemes with 2 contacts in each direction; This unit is particularly designed for "light hoisting" equipment or auxiliary functions.

- **XKD**: controller with variable composition schemes, depending on requirement, with 16 contacts per movement. This unit is particularly designed for "medium hoisting" equipment or auxiliary functions.

- **XKM**: controller with variable composition schemes with 24 contacts per movement, to meet the intensive duty requirements of heavy industry. This unit is designed exclusively for controller desks XJC.

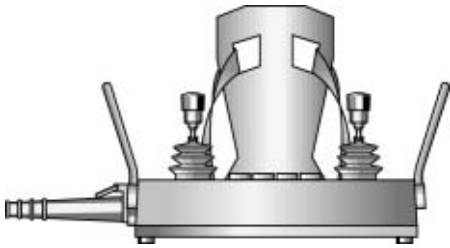
Note: in order to fulfil the ergonomic requirements of the user, controllers XKM used in control desks must be fitted with short control levers.

Note: whenever the terms "right-hand" or "left-hand" are used in this catalogue, reference is being made to their positions as shown in the diagram below. It determines the position of the engraving on the controller legends.

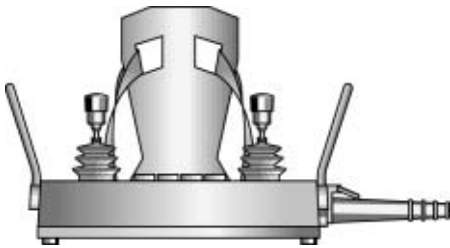


Portable controller stations

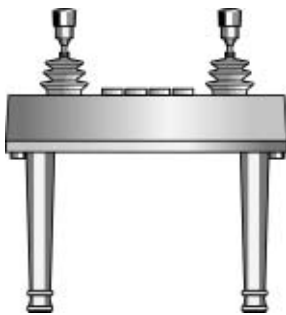
Type **XJP A** for controllers XKB and
Ø 22 mm pushbuttons, switches and pilot lights
Empty stations



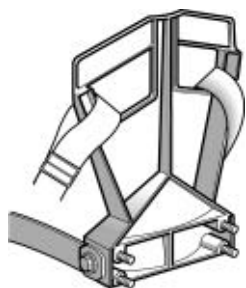
XJP A5●3, cable entry from right



XJP A5●3, cable entry from left



XJP A5●3, cable entry through base



XJP Z901



XJP Z903



XJP Z902



XJP Z922



XJP Z926

Presentation

Portable controller stations XJP comprise a yellow, glass-reinforced polyester, enclosure that can be fitted with 2 controllers type XKB and up to 8 x Ø 22 control and signalling units.

Degree of protection: IP 54.

Weight:

- Empty station with cable boot: 2 kg.
- Fitted station: approximately 4 kg.

2 models:

- **XJP A5:** enabling the mounting of controllers XKB fitted with 4-contact blocks per movement, with or without potentiometers.
- **XJP A6:** enabling the mounting of controllers XKB fitted with 4-contact blocks per movement + 1 zero (centre) position contact, without potentiometers.

Carrying device

Either a polyamide harness, adjustable at 60° intervals, or a rigid chest frame with adjustable harnesses.

Protection device

2 metal loop guards that fix onto each end of the station assure protection and can also be used as grips.

Cabling device

Rubber cable boot mounted on side of station, for Ø 10 to 22 mm or Ø 19 to 26 mm cable, or mounted on the base of the station (left or right-hand side), for Ø 20 mm cable.

References

Composition of the reference for a portable controller station: type XJP A●

	Model	Cable boot	Accessories
XJP A	□	□	□
For controllers type XKB with:			
4 contacts, with or without potentiometers	5		
4 contacts + 1 zero (centre) position contact, without potentiometers	6		

Cable boot

Side entry for Ø 10 to 22 mm cable	To left	1
	To right	2
Side entry for Ø 19 to 26 mm cable	To left	3
	To right	4
Base entry for Ø 20 mm cable	To left	5
	To right	6

Accessories

Adjustable harness, alternative directions	0
Harness and protective metal guards	9
Chest frame with harnesses	3
Chest frame and protective metal guards	4

Spare parts

Description	Characteristics	Reference	Weight kg
Chest frame	With harnesses	XJP Z901	0.720
Harness	Adjustable, alternative directions	XJP Z902	–
Protective guards	Pair	XJP Z903	0.350
Cable boots	Ø 10 to 22 mm	XJP Z922	0.180
	Ø 19 to 26 mm	XJP Z926	0.170

Portable controller stations

Type **XJP A** for controllers XKB and Ø 22 mm pushbuttons, switches and pilot lights
Variable composition stations, factory assembled

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

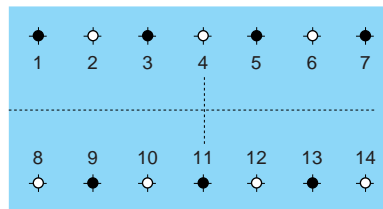
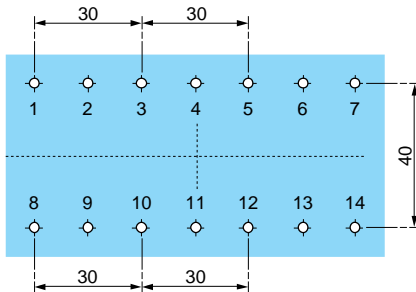
Reference of portable controller station, type XJP A

Number of identical stations	<input type="text"/>	Basic reference, to be completed XJP A	<input type="text"/>	<input type="text"/>	<input type="text"/>
For controllers type XKB with:					
4 contacts, with or without potentiometers			5		
4 contacts + 1 zero (centre) position contact, without potentiometers			6		
Cable boot					
Side entry for Ø 10 to 22 mm cable	To left			1	
	To right			3	
Side entry for Ø 19 to 26 mm cable	To left			2	
	To right			4	
Base entry for Ø 20 mm cable	To left			5	
	To right			6	
Accessories					
Adjustable harness, alternative directions					0
Harness and protective metal guards					9
Chest frame with harnesses					3
Chest frame and protective metal guards					4

Position and reference of Ø 22 units to be mounted on controller stations type XJP A●●●

Cut-outs grid for Ø 22 units

Example of grid usage for 7 x Ø 22 units



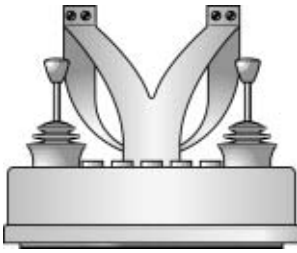
For any other type of cut-out, please consult your Regional Sales Office.

Position		Reference (please consult your Regional Sales Office)		
Item	Mark the position on the grid above	Body/contact assembly (control or signalling unit)	Operating head (control or signalling unit)	Legend
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

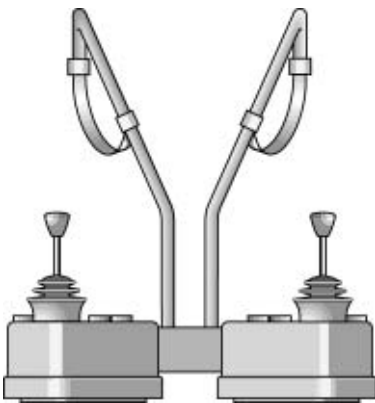
- Up to 8 control and signalling units can be used if the associated controllers are not fitted with potentiometers.
- Up to 4 control and signalling units can be used if the associated controllers are fitted with potentiometers.
- The controllers XKB are to be ordered using the Order form, see pages 12 and 13.

Portable controller stations

Type **XJ9 BA** for controllers XKB and
Ø 22 mm or Ø 30 mm pushbuttons, switches
and pilot lights



XJ9 BA1



XJ9 BA2



XJ9 BZ920

Presentation

The portable controller stations comprise either 1 (XJ9 BA1) or 2 (XJ9 BA2) yellow, laminated polyester, enclosure(s). Each enclosure can be fitted with a controller type XKD and control and signalling units.

2 models:

- **XJ9 BA1:** 1 to 7 Ø 22 units or 1 to 5 Ø 30 units,
- **XJ9 BA2:** 1 to 6 Ø 22 units or 1 to 4 Ø 30 units.

Degree of protection: IP 54.

Weight:

- XJ9 BA1: empty station with cable boot: 3.5 kg.
- XJ9 BA1: fitted station: approximately 7.5 kg.
- XJ9 BA2: empty station with cable boot: 4.5 kg.
- XJ9 BA2: fitted station: approximately 8.5 kg.

Carrying device

- XJ9 BA1: rigid chest frame with adjustable harness.
- XJ9 BA2: adjustable tubular shoulder frame.

Cabling device

Rubber cable boot for Ø 20 mm cable maximum that can be located to allow cable entry from behind, from the left or from the right of the operator.

References

Description	Maximum number of cut-outs for Ø 22 or Ø 30 mm units	Reference	Weight kg
Portable controller station with 1 enclosure for controller XKD (1)	7 x Ø 22 mm cut-outs	XJ9 BA1	3.500 (2)
	5 x Ø 30 mm cut-outs		
Portable controller station with 2 enclosures for controller XKD (1)	6 x Ø 22 mm cut-outs	XJ9 BA2	4.500 (2)
	4 x Ø 30 mm cut-outs		

Spare parts

Description	For use with station	Reference	Weight kg
Carrying devices	XJ9 BA1	XJ9 BZ911	–
	XJ9 BA2	XJ9 BZ912	–
Cable boot for Ø 20 mm cable maximum	XJ9 BA1 XJ9 BA2	XJ9 BZ920	0.200

(1) Controllers to be ordered separately (see pages 20 and 21).

(2) Weight of empty station with cable boot:

- XJ9 BA1 station fitted with 2 x XKD controllers + pushbuttons, etc: approximately 7.5 kg,
- XJ9 BA2 station fitted with 2 x XKD controllers + pushbuttons, etc: approximately 8.5 kg.

Portable controller stations

Type **XJ9 BA** for controllers XKB and Ø 22 mm or Ø 30 mm pushbuttons, switches and pilot lights

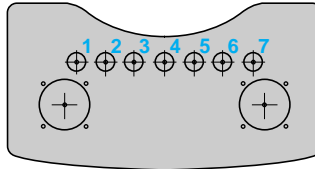
Variable composition stations, factory assembled

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Variable composition controller stations

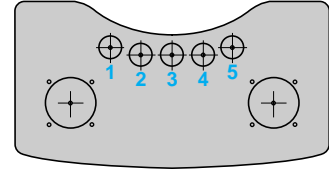
Number of identical stations **XJ9 BA1**

Cut-outs for Ø 22 mm units



7 x Ø 22 mm units maximum

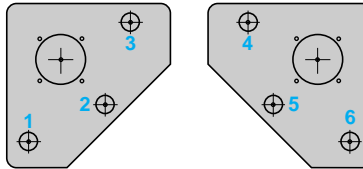
Cut-outs for Ø 30 mm units



5 x Ø 30 mm units maximum

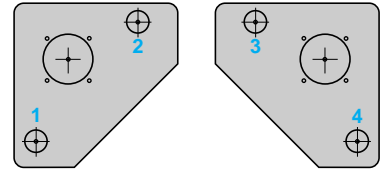
Number of identical stations **XJ9 BA2**

Cut-outs for Ø 22 mm units



6 x Ø 22 mm units maximum

Cut-outs for Ø 30 mm units



4 x Ø 30 mm units maximum

Position and reference of units to be mounted on controller stations type XJ9 BA●

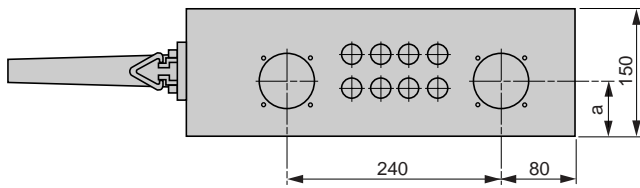
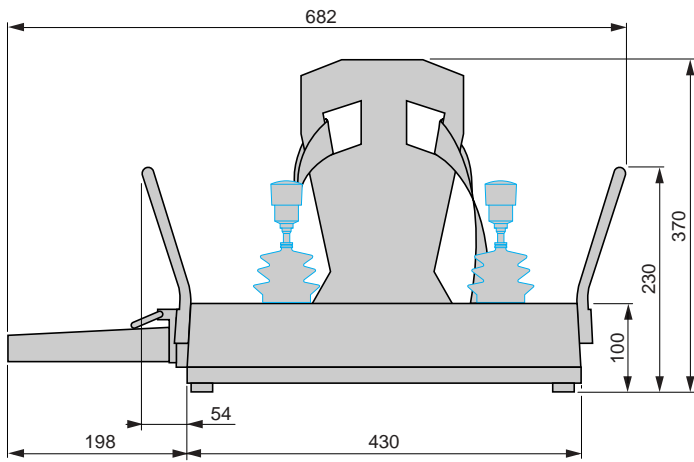
Position		Reference (please consult your Regional Sales Office)		
Item	Mark the position on the grid above	Body/contact assembly (control or signalling unit)	Operating head (control or signalling unit)	Legend
1				
2				
3				
4				
5				
6				
7				

The controllers XKD are to be ordered using the Order form, see pages 20 and 21.

Portable controller stations

Type **XJP A** for controllers XKB and
 Ø 22 mm pushbuttons, switches and pilot lights

XJP

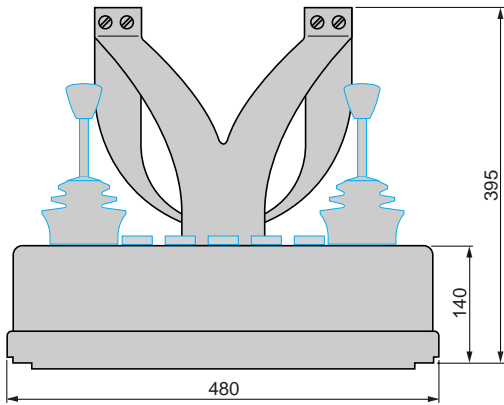


	a
XJP A5	60
XJP A6	64.5

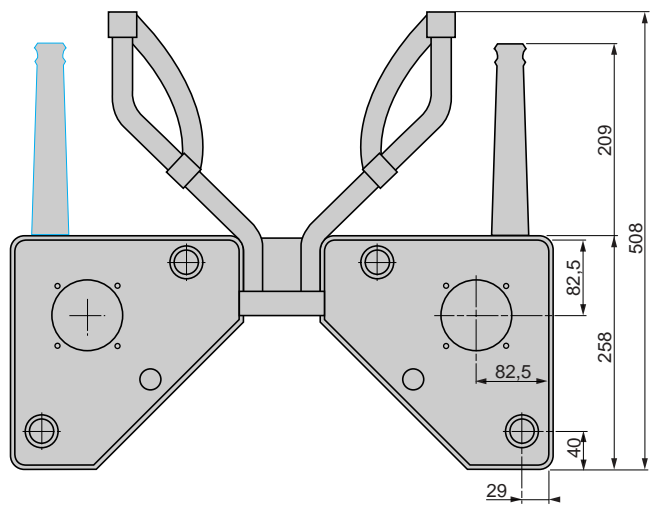
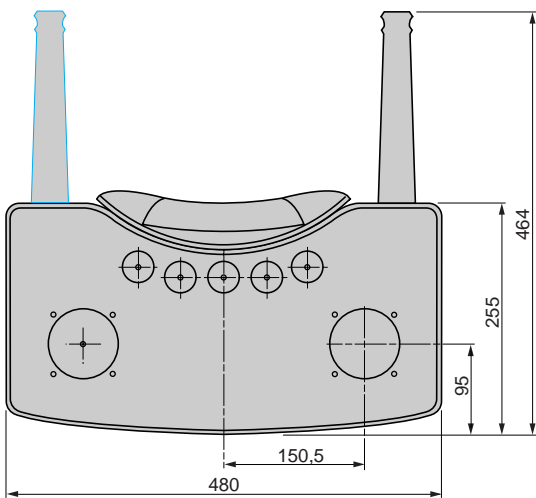
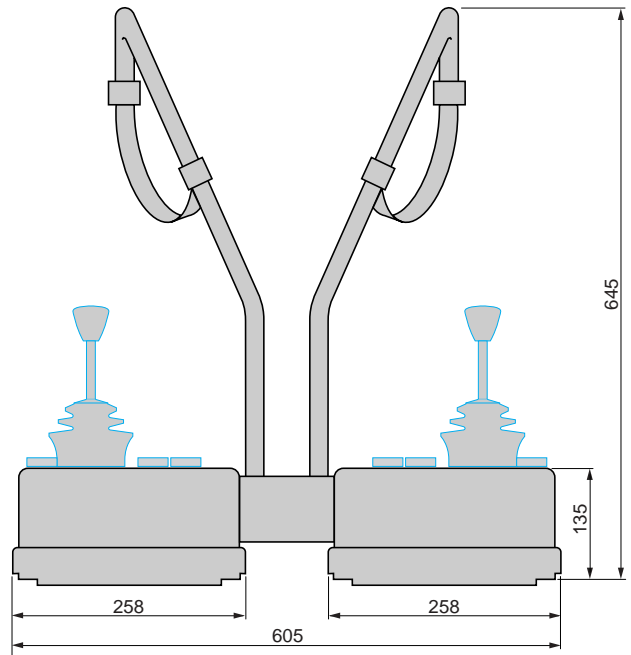
Portable controller stations

Type **XJ9 BA** for controllers XKB and \varnothing 22 mm or \varnothing 30 mm pushbuttons, switches and pilot lights

XJ9 BA1



XJ9 BA2





Controller desk XJC 6 fitted with "high comfort" seat

Presentation

The basic fixed controller desk XJC C6 comprises two enclosures, both with forward raked top panel, fixed to the floor either side of a "high comfort" seat.

- Paint finish: "hammered".
- Weight of each enclosure: 14 kg.
- Degree of protection: IP 54.

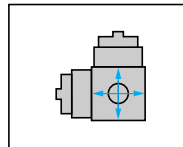
"High comfort" seat

- Helical spring suspension with double-action hydraulic shock absorbers.
- Vertical suspension travel of 100 mm.
- Manual adjustment to suit weight of operator from 50 kg to 120 kg.
- Seat height and rake adjustment of 60 mm.
- Adjustable rake backrest.
- Forward/back adjustment of 160 mm.
- Suspension cover.
- Fold-up armrests with adjustable inclination.
- Adjustable headrest.
- Control levers positioned at front.
- Top quality fabric upholstery (grey/black).

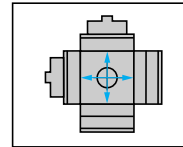
References

Description	Reference	Weight (2) kg
Fixed controller desk with plain enclosures for controllers (1) (without panels for control and signalling units).	Right-hand or left-hand XJC C6	55.000

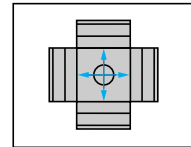
Standard maximum capacity (right-hand or left-hand)



1 XKD
2 x 10 contacts
+ potentiometers



1 XKM A
2 x 12 contacts
+ potentiometers



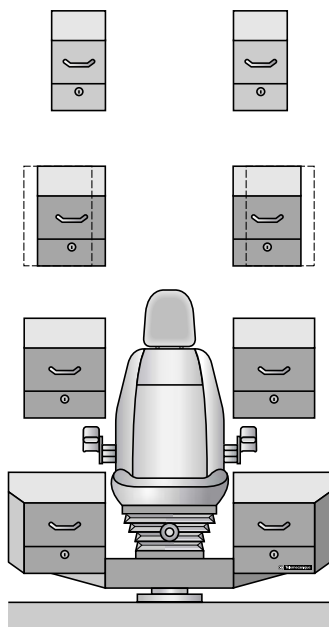
1 XKM A
2 x 16 contacts +
potentiometers

Spare parts

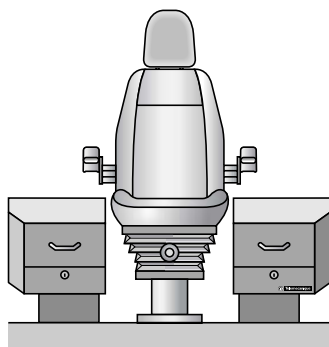
Description	Reference	Weight kg
"High comfort" seat	XJC Z926	27.000
Armrests (pair)	XJC Z906	1.800
Headrest	XJC Z907	1.250
Fabric protective seat cover	XJC Z908	0.500

(1) Controllers to be ordered separately, see pages 20 and 21, 28 and 29.

(2) Minimum weight. Variable weight depending on equipment fitted.



XJC D6



XJC E6

Presentation

The controller desks XJC D6 and XJC E6 comprise 2 enclosures, both with forward raked top panels for controllers, positioned either side of a "high comfort" seat (see page 54).

- **XJC E6:** the enclosures and the seat of the controller desk are fixed to the floor.
- **XJC D6:** the enclosures and the seat of the controller desk are mounted on a frictional bearing pedestal.

Composition of the reference

		Model	Type of seat	Enclosure		Central unit angle of rotation
				Right-hand	Left-hand	
		XJC	6			
Model						
Rotating desk, frictional bearing		D				
Fixed desk		E				
Type of seat						
"High comfort"			6			
Enclosure + top panel assembly (1)						
Width of enclosure	250 mm			10	10	
				10	19	
				11	12	
				13	14	
				19	10	
				19	19	
	300 mm			20	20	
				21	22	
				23	24	
				29	29	
	300 mm, offset (for XKM C)			30	30	
				30	39	
				31	32	
				33	34	
				39	30	
				39	39	
	360 mm			40	40	
				40	49	
				41	42	
				43	44	
				49	40	
				49	49	
	430 mm			50	50	
				51	52	
				53	54	
				55	56	
				59	58	
Angle of rotation of swivel support (XJC D only)						
Right-hand	Left-hand					
0°	45°					12
	90°					13
	135°					14
45°	0°					21
	45°					22
	90°					23
	135°					24
90°	0°					31
	45°					32
	90°					33
135°	0°					41
	45°					42

Spare parts

See page 54.

(1) Choice of enclosures, see pages 56 to 59. The left and right enclosures must be the same width.

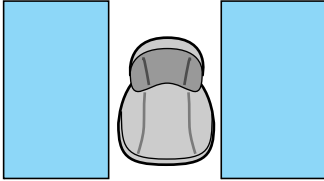
Fixed or rotating controller desks

Selection of removable top panels for enclosures of controller desks types **XJC D** and **XJC E**
Standard maximum capacities

Enclosures 250 mm wide

Undrilled enclosures (1)

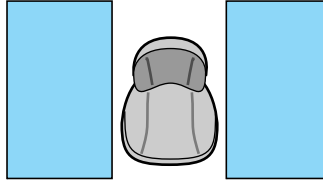
Right-hand: code 19 Left-hand: code 19



Cut-outs to be made by user.

Enclosures for specific cut-outs (to be specified when ordering) (1)

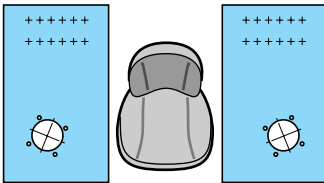
Right-hand: code 10 Left-hand: code 10



Provide details and send a cut-out plan with the Order form (see page 60).

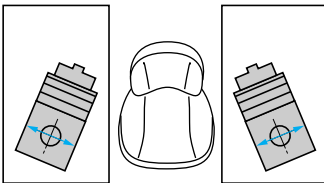
Enclosures with standard and maximum capacity cut-outs made by Telemecanique (1)

Right-hand: code 11 Left-hand: code 12

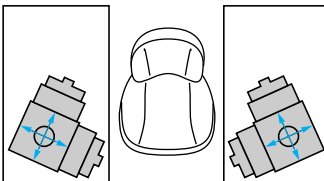


Mounting possible per enclosure

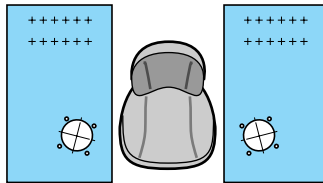
1 **XKM B** (12 contacts + potentiometer max.)



or
1 **XKD F** (2 x 10 contacts + potentiometers max.)

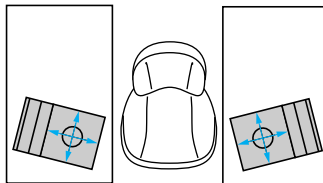


Right-hand: code 13 Left-hand: code 14

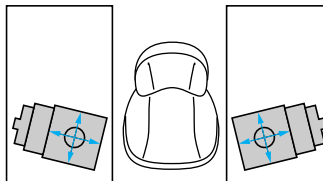


Mounting possible per enclosure

1 **XKM B** (12 contacts max.)



or
1 **XKD F** (10 contacts + potentiometer max.)



(1) The left and right enclosures must be the same width.

Fixed or rotating controller desks

Selection of removable top panels for enclosures of controller desks types **XJC D** and **XJC E**

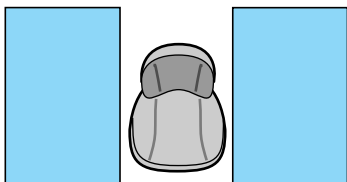
Standard maximum capacities

Enclosures 300 mm wide and 300 mm offset

Undrilled enclosures (1)

Right-hand:
code **29**
or **39** (offset)

Left-hand:
code **29**
or **39** (offset)

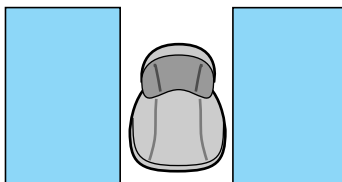


Cut-outs to be made by user.

Enclosures for specific cut-outs (to be specified when ordering) (1)

Right-hand:
code **20**
or **30** (offset)

Left-hand:
code **20**
or **30** (offset)

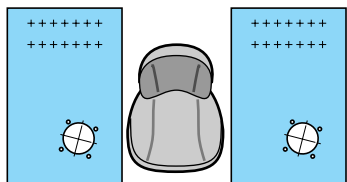


Provide details and send a cut-out plan with the Order form (see page 60).

Enclosures with standard and maximum capacity cut-outs made by Telemecanique (1)

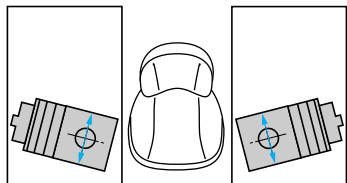
Right-hand:
code **21**
or **31** (offset)

Left-hand:
code **22**
or **32** (offset)



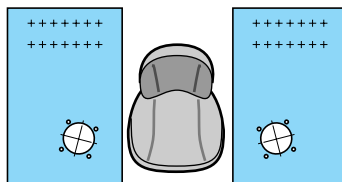
Mounting possible per enclosure

1 **XKM B** (12 contacts + potentiometer max.)



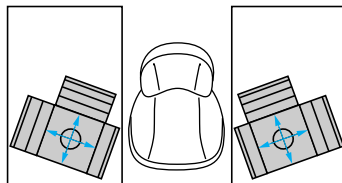
Right-hand:
code **23**
or **33** (offset)

Left-hand:
code **24**
or **34** (offset)

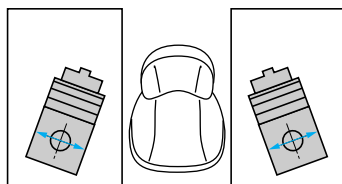


Mounting possible per enclosure

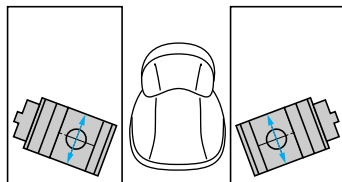
1 **XKM A** (2 x 12 contacts max.)



or
1 **XKM B** (12 contacts + potentiometer)



or
1 **XKM B** (12 contacts + potentiometer)



(1) The left and right enclosures must be the same width.

Fixed or rotating controller desks

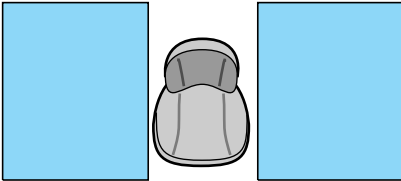
Selection of removable top panels for enclosures of controller desks types **XJC D** and **XJC E**
Standard maximum capacities

Enclosures 360 mm wide

Undrilled enclosures (1)

Right-hand:
code 49

Left-hand:
code 49

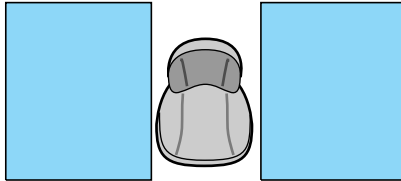


Cut-outs to be made by user.

Enclosures for specific cut-outs (to be specified when ordering) (1)

Right-hand:
code 40

Left-hand:
code 40

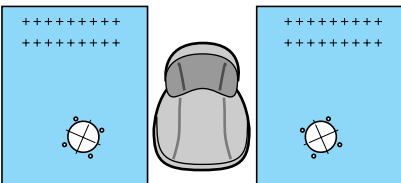


Provide details and send a cut-out plan with the Order form (see page 60).

Enclosures with standard and maximum capacity cut-outs made by Telemecanique (1)

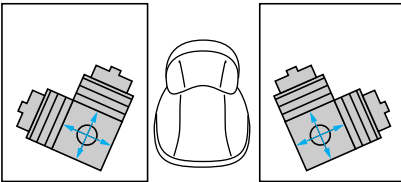
Right-hand:
code 41

Left-hand:
code 42



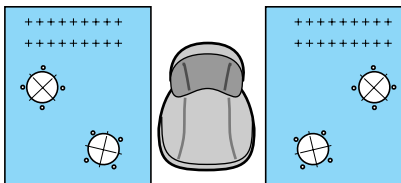
Mounting possible per enclosure

1 **XKM A** (2 x 12 contacts + potentiometers)



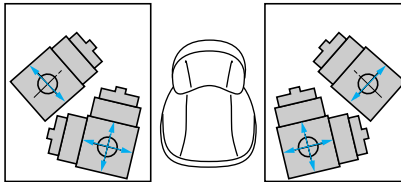
Right-hand:
code 43

Left-hand:
code 44



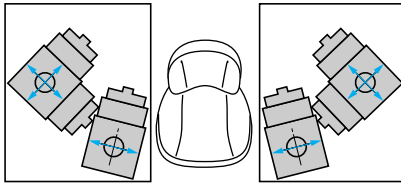
Mounting possible per enclosure

1 **XKD** (10 contacts + potentiometer)
+ 1 **XKD** (2 x 10 contacts + potentiometers)



or

1 **XKD** (10 contacts + potentiometer)
+ 1 **XKD** (2 x 10 contacts + potentiometers)



(1) The left and right enclosures must be the same width.

Fixed or rotating controller desks

Selection of removable top panels for enclosures of controller desks types **XJC D** and **XJC E**

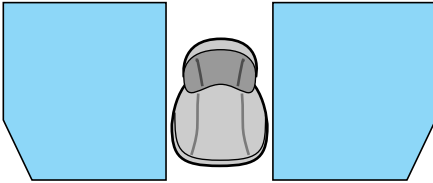
Standard maximum capacities

Enclosures 430 mm wide

Undrilled enclosures (1)

Right-hand:
code 59

Left-hand:
code 58

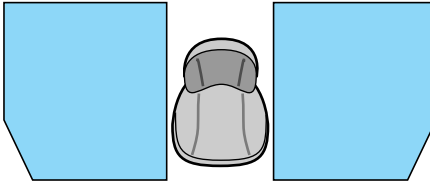


Cut-outs to be made by user.

Enclosures for specific cut-outs (to be specified when ordering) (1)

Right-hand:
code 50

Left-hand:
code 50



Provide details and send a cut-out plan with the Order form (see page 60).

Enclosures with standard and maximum capacity cut-outs made by Telemecanique (1)

Right-hand:
code 51

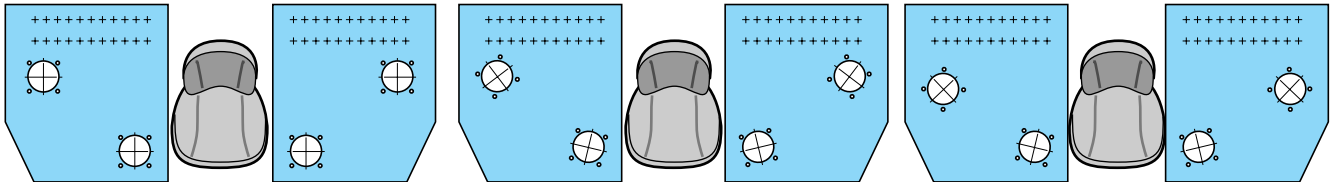
Left-hand:
code 52

Right-hand:
code 53

Left-hand:
code 54

Right-hand:
code 55

Left-hand:
code 56



Mounting possible per enclosure

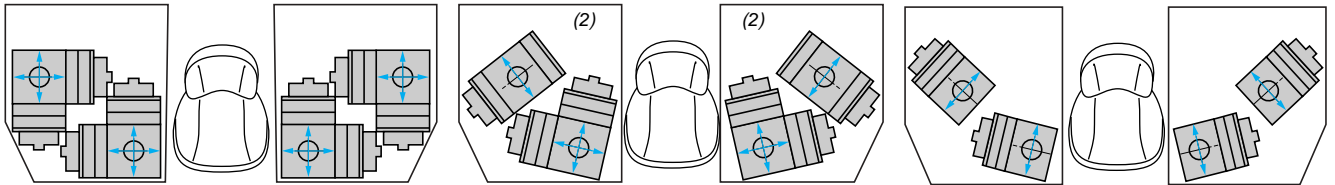
2 **XKM A** (2 x 8 contacts + 2 potentiometers)

Mounting possible per enclosure

1 **XKM B** (8 contacts + potentiometer)
+ 1 **XKM A** (2 x 8 contacts + 2 potentiometers)

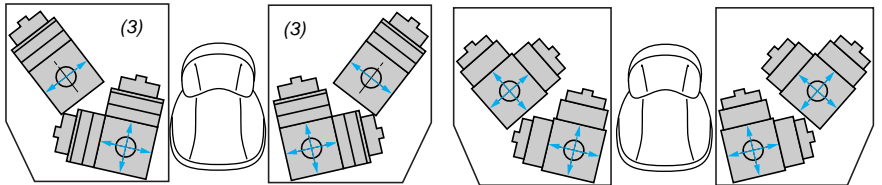
Mounting possible per enclosure

2 **XKM B** (8 contacts + potentiometer)



Alternative installation possible using same equipment

or
2 **XKD** (2 x 10 contacts + 2 potentiometers)



Installation of control and signalling units

- Ø 22 mm units: one Ø 22 mm unit can be installed at each position indicated.
- Ø 30 mm units: it is necessary to leave one indicated position unused between each Ø 30 mm unit.

Panel width	Maximum number of Ø 22 mm units	Maximum number of Ø 30 mm units
250 mm	12	6
300 mm	14	8
360 mm	18	10
430 mm	22, except □ for enclosure codes 53 and 54 (2) = 21 □ for enclosure codes 53 and 54 (3) = 19	12, except □ for enclosure codes 53 and 54 (2) = 11 □ for enclosure codes 53 and 54 (3) = 10

(1) The left and right enclosures must be the same width.

(2) Cut-out 18 unusable:

- 21 x Ø 22 units or
- 11 x Ø 30 units.

(3) Cut-outs 18-20-22 unusable:

- 19 x Ø 22 units or
- 10 x Ø 30 units.

Fixed or rotating controller desks

Type **XJC**, variable composition, factory assembled

Reference (please use a separate Order form for each desk model required)

	Model	Seat	Enclosure + top panel		Angle of rotation
			Right-hand	Left-hand	
Number of identical desks <input type="text"/>	XJC D	<input type="text" value="6"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	XJC E	<input type="text" value="6"/>	<input type="text"/>	<input type="text"/>	
	XJC C	<input type="text" value="6"/>			

Details of control and signalling units mounted on top panel (factory mounted)

Customer's reference	Right-hand			Left-hand		
	Reference (please consult your Regional Sales Office)			Reference (please consult your Regional Sales Office)		
	Body	Head	Legend	Body	Head	Legend
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

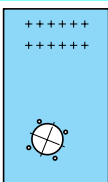
Accessories

Cross the appropriate box

For "High comfort" seat

Armrests (pair)	<input type="checkbox"/>
Headrest	<input type="checkbox"/>
Protective cover	<input type="checkbox"/>
Shock absorber	<input type="checkbox"/>

Installation of control and signalling units on top panels

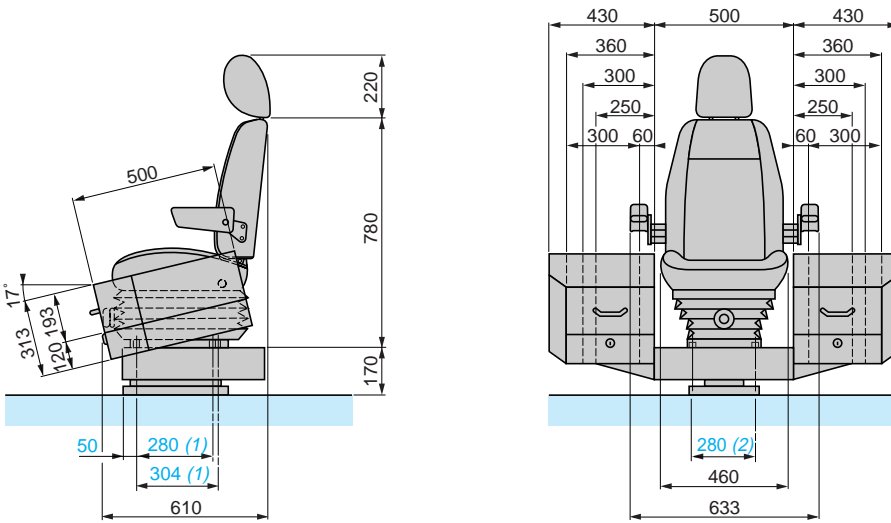


When ordering, attach a fully dimensioned plan indicating the cut-outs required and their position (state the units of measurement). You may find the Schneider Electric standardised installations shown on pages 56 to 59 a useful guide; the configurations recommended are for maximum capacity.

Fixed or rotating controller desks

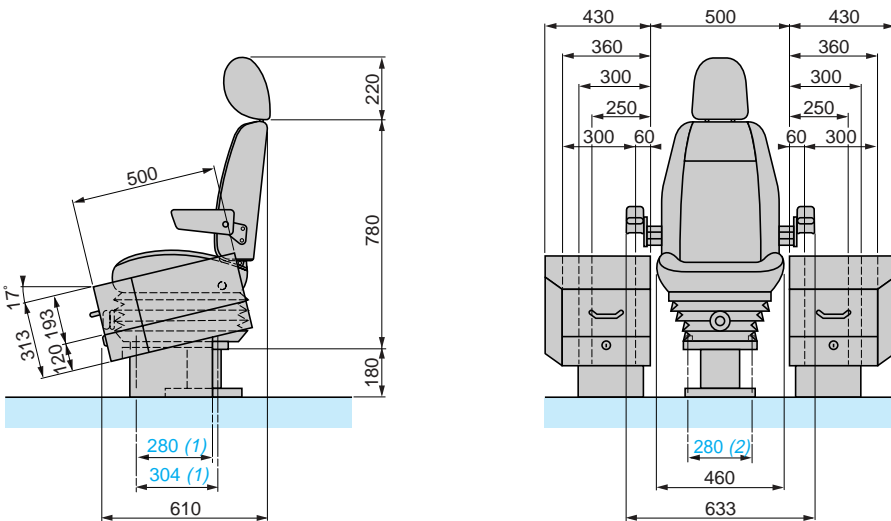
Type **XJC**, variable composition, factory assembled

XJC C6



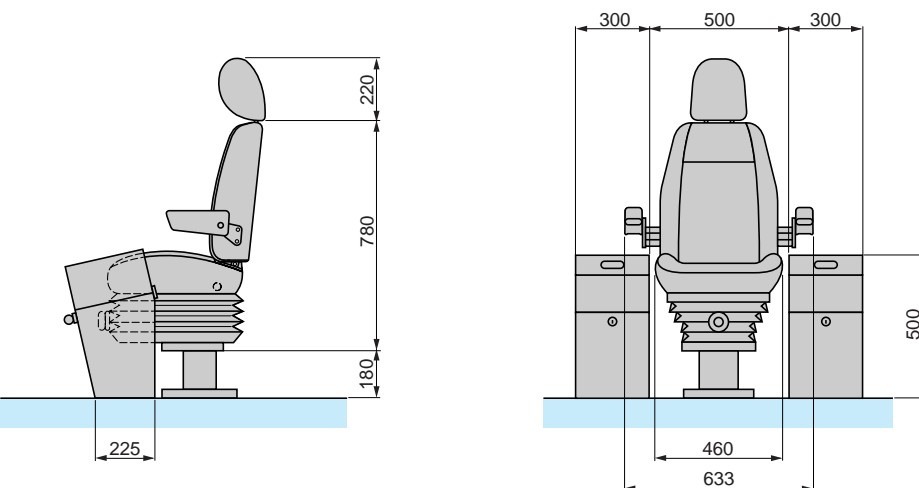
- (1) Seat: 4 fixing holes, Ø 6 mm
- (2) Forward/back adjustment rail.

XJC E6



- (1) Seat: 4 fixing holes, Ø 6 mm
- (2) Forward/back adjustment rail.

XJC D6



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