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Harmony® XK, XD controllers for hoisting applications

Catalog

February 2015



Schneider Electric

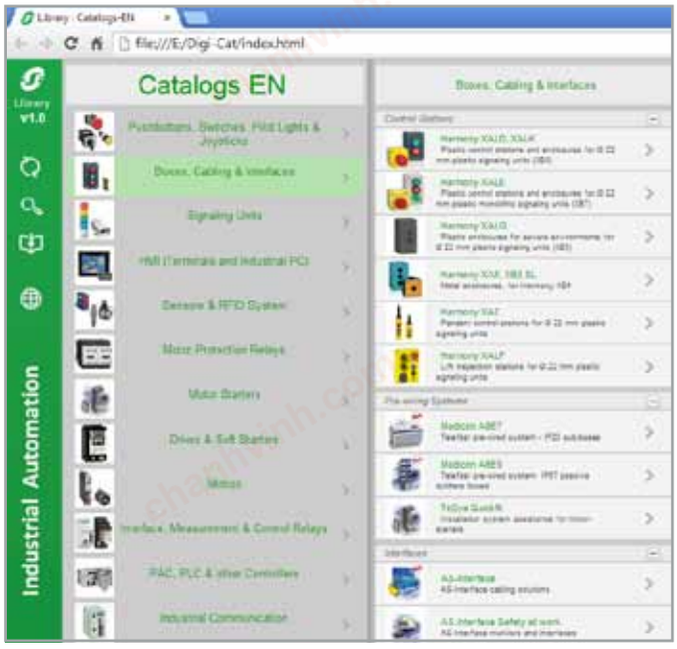
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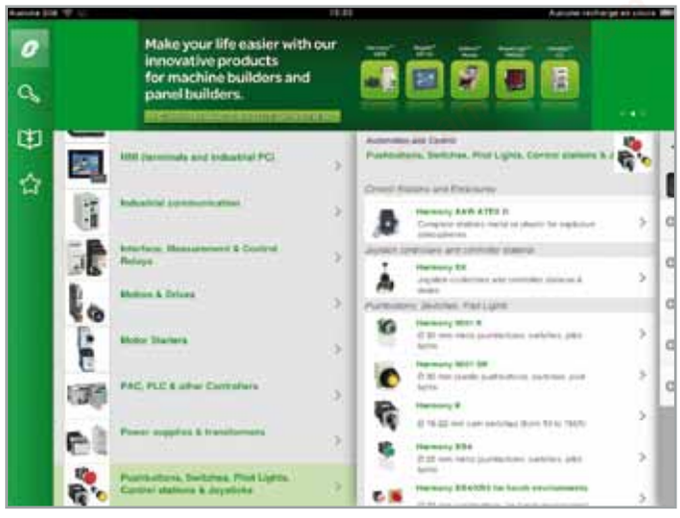


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Controllers

Selection guide for hoisting applications, types XD and XK

Selection guide 1/2

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Controllers
For hoisting applications, types **XD** and **XK**

Applications			"Light hoisting"		
			Compact and light weight		
			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	
					
Mechanical durability (in millions of operating cycles)			1 in each direction	1 in each direction	1 in each direction
Number of directions	Basic		2 or 4 depending on model	4	4
	Variable composition		–	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 ⎓	∿ 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** *(3)*	**XKBA**	**XKBE**

(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.*
(3) For information in XD4 range please refer to DIA5ED2121212EN, Control and signaling units Ø 22, Harmony XB4 metal catalog, page 37
For information in XD5 range please refer to DIA5ED2121213EN, Control and signaling units Ø 22, Harmony XB5 Plastic catalog, page 39.

"Medium hoisting"	"Heavy hoisting"		
Compact and fully configurable unit	Extremely robust and fully configurable unit		
For control of cranes, overhead travelling cranes, etc. Can be installed on fixed seated controller desks type XJC	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
XKDF	**XKMA**	**XKMB**	**XKMC**

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Controllers

Harmony XK

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■ **Controllers for “medium hoisting” applications, type XKDF**

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■ **Controllers for “heavy hoisting” applications, type XKM**

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Controllers
For hoisting applications, type **XK**

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

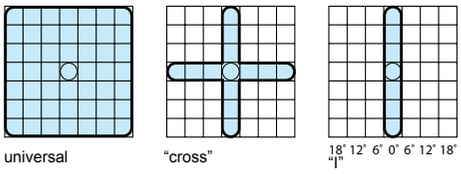
Articulated mechanical assembly that holds the control lever, lever gate, actuating mechanism, cam carriers, contacts and potentiometer adaptation device.

Control lever

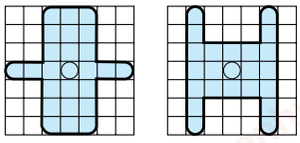
Operating device that enables separate or simultaneous control of the movements. Fitted to it are dust and damp protecting bellows, the handle and mechanical and electrical safety devices that are actuated when the controller lever is returned to its zero (centre) position.

Lever gate

Standard lever gates



Examples of special lever gates



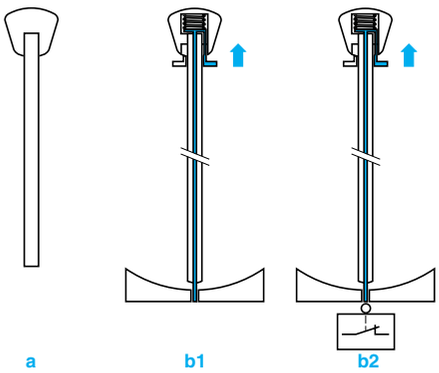
2 types of lever gate:
■ Standard types:
□ universal: allows the lever to move to its maximum travel in 1 or 2 directions simultaneously ("universal" or "8-direction" controller),
□ "cross" or "I" gates: only allow the lever to move to its maximum travel in 1 direction at a time.

■ 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.

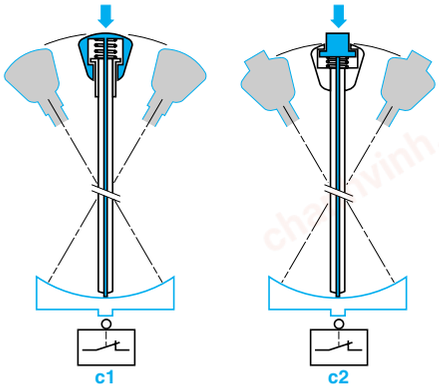
Handles



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.



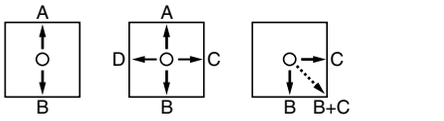
c1 **"Dead man's" handle.**
Operation:
The knob of the handle comprises a fixed part (lower section) and a moving part (upper section).
When the upper section of the knob is pushed downwards it pushes a sliding rod within the lever.
This rod actuates a moving bowl which, in turn, causes a contact block (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.

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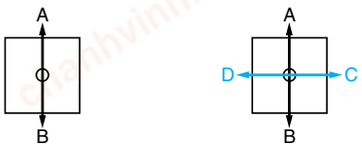
Controllers
For hoisting applications, type **XK**

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

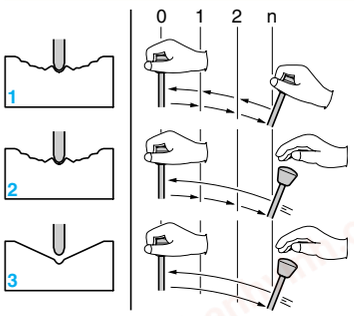


The movement is the combination of 2 directions either side of the zero position that are directly in line.

Electrical position

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

Types of lever movement



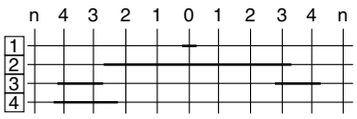
Three different types of lever operation for each direction:
1 **Notched positions, with stayput operation.**
The control lever is moved notch by notch from its zero (centre) position to its maximum travel position in the required direction.
The lever maintains its position when the operator releases 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

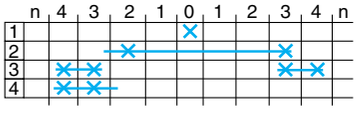
When designing the scheme take into account that all contacts are closed until actuated (opened) by an operating cam.

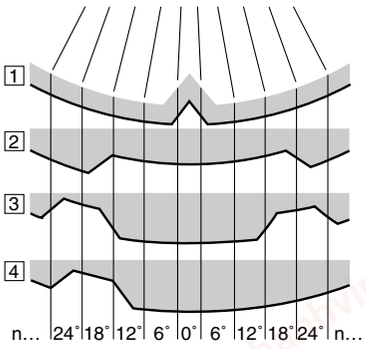
Cam schemes

Electrical scheme



Controller scheme





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.

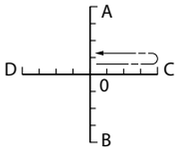
Cam actuation of contacts

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 and the ordering grids for XK controllers are shown opposite.
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



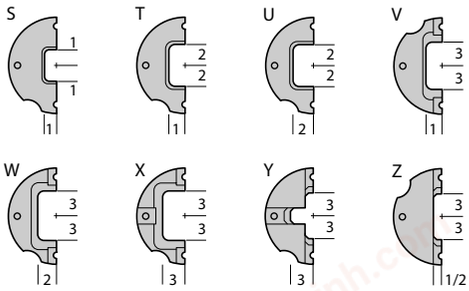
An operating cycle applied from an initial common O position is the passing from this initial position to the extreme position in each direction and subsequent return to the initial O position.

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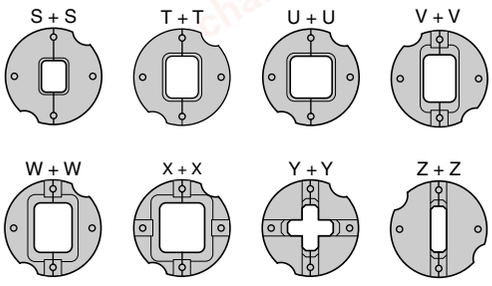
Controllers
For “light hoisting” applications, type **XKB**



XKB●



Half-gates



9 main combinations

Compact and lightweight units, designed to control “light hoisting” and materials handling equipment. Mainly for use in portable stations.
2 models:
■ **XKBA**: controllers with predefined, non modifiable, scheme.
■ **XKBE**: controllers with variable composition schemes.

Control lever
Length: 130 mm/*5.11 in.*. 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 (**XKBZ972** for 20°, **XKBZ971** 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°). (XKBE: only 1 contact may be used at each notch.)
■ **Unnotched positions, with spring return to zero operation**: 28° maximum travel in each direction. (XKBE: 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
■ **XKBA**: 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.
■ **XKBE**: 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 2/7).

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.

Characteristics: page 2/5
Referencing grid: page 2/6
Dimensions: page 2/30

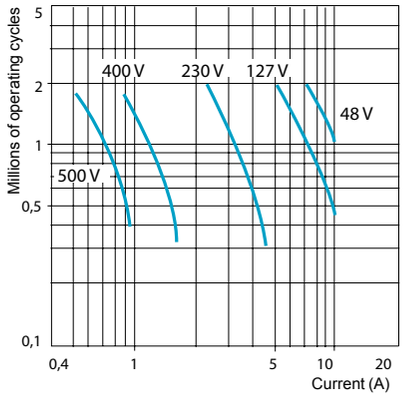
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Controllers
For “light hoisting” applications, type **XKB**

Environment			
Conformity to standards			EN/IEC 60947-5-1, UL 508, CSA C22-2 n° 14
Product certifications			UL, CSA A300, Q300, CCC, RRS
Protective treatment			Standard version “TC”
Ambient air temperature	For storage	**°C/°F**	- 40…+ 70/*-40…158*
	For operation	**°C/°F**	- 20…+ 70/*-4…158*
Operating position			All positions
Vibration resistance	Conforming to IEC 60068-2-6		6 gn (1 to 70 Hz)
Shock resistance	Conforming to IEC 60068-2-27		20 gn, duration 11 ms
Electric shock protection	Conforming to IEC 61140		Class I
Maximum operating lever force required in each direction		**daN**	< 1.7
Degree of protection	Conforming to IEC 60529		IP 54 (unit with simple handle mounted in dust and damp proof enclosure) IP 20 (contact block)
Mechanical durability	In millions of operating cycles		1 in each direction
Weight		**kg/*lb***	**XKBA** and **XKBE**: 0.850/*1.874*
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 EN/IEC 60947-5-1, UL 508, CSA C22-2 n° 14
Rated insulation voltage		**V**	⎓ 500 conforming to EN/IEC 60947-1, degree of pollution 3
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
Terminal referencing			Conforming to EN 50013
Short-circuit protection			10 A cartridge fuse type gG according to EN/IEC 60947-5-1

Operational power
Conforming to EN/IEC 60947-5-1 Appendix C
Utilisation categories AC-15 and DC-13
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**
⎓	90	90	75

Connection	Captive screw clamp terminals	Clamping capacity: □ minimum 1 x 0.5 mm², □ maximum, with or without cable end: 2 x 1.5 mm² or 1 x 2.5 mm²

Presentation: page 2/4
Referencing grid: page 2/6
Dimensions: page 2/30

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Controllers

For “light hoisting” applications, types **XKBA** and **XKBE**

Grid for composing the reference of a controller

Reference of controller type XKB

	Model	Contacts	Handle	Lever movement AB	Lever movement CD	Potentiometer adaptation
XKB						

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 + 1 zero (centre) position contact	Screw clamp terminal connections	**3**
	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 *(1)*	**2**
Notched positions, with spring return to zero operation	**3**

On movement CD

Movement not required (blocked)	**0**
Notched positions, with stayput operation	**1**
Unnotched positions, with spring return to zero operation *(1)*	**2**
Notched positions, with spring return to zero operation	**3**

Potentiometer adaptation

Without adaptation nor potentiometer		**0**
With 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 movement recommended when using a potentiometer.
(2) Potentiometer type and value to be stated when ordering. For standard application potentiometers see page 2/34.

Presentation: page 2/4 Characteristics: page 2/5 Dimensions: page 2/30

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Order form example (1)

Controllers
For "light hoisting" applications, type **XKBE**
Ordering form completion example

Requirement

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

XKB

Composition of the reference (see page 2/6)

E	3	4	2	3	7

Model
With variable composition scheme (customised elect. scheme as shown below) **E**

Contact blocks
Block with 4 contacts + 1 zero (centre) position contact per movement (screw clamp terminals) **3**

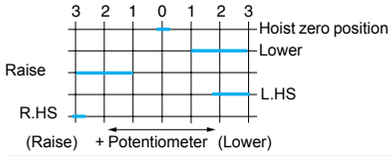
Handle
"Dead man's" type **4**

Type of lever operation on movement AB
Unnotched positions, with spring return to zero operation **2**

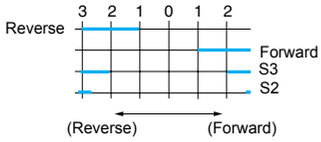
Type of lever operation on movement CD
Notched positions, with spring return to zero operation **3**

Potentiometer adaptation
With adaptation device + potentiometer on movement AB, standard 4700 Ω, size 15, model **7**

Electrical scheme for movement AB "hoist"



Electrical scheme for movement CD "long travel"



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.

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

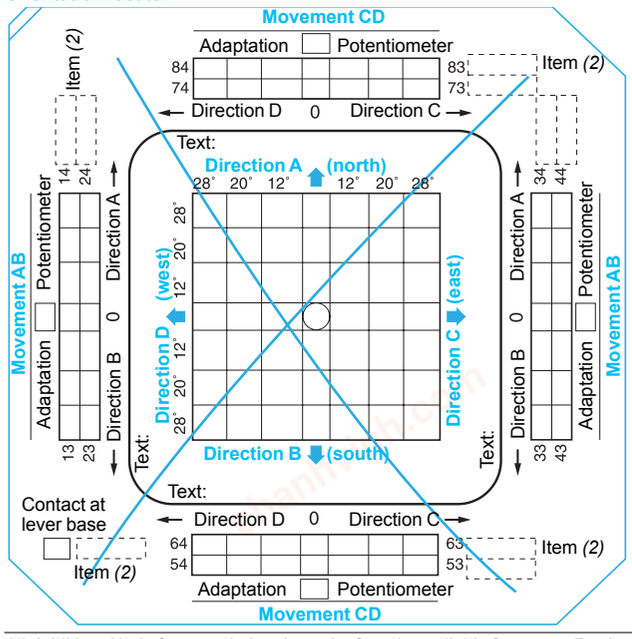
Without legend ☐
With blank legend, **XKBY1** ☐
With "traverse-slew" symbols, **XKBY2** ☐
With "hoist-long travel" symbols, **XKBY3** ☐

With specific engraved text, **XKBY1001**
(clearly state the text on the scheme below)
Left-hand operated unit ☐
Right-hand operated unit ☒

⚠ If the scheme is not defined, all **XKBE** controllers will be supplied with the standard scheme as used for XKBA.

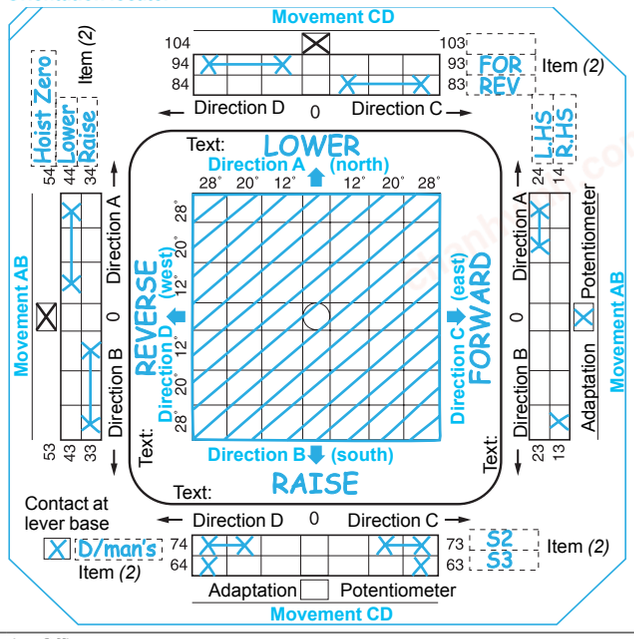
Scheme 1: 4 contacts per movement (viewed from above)

Orientation locater



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

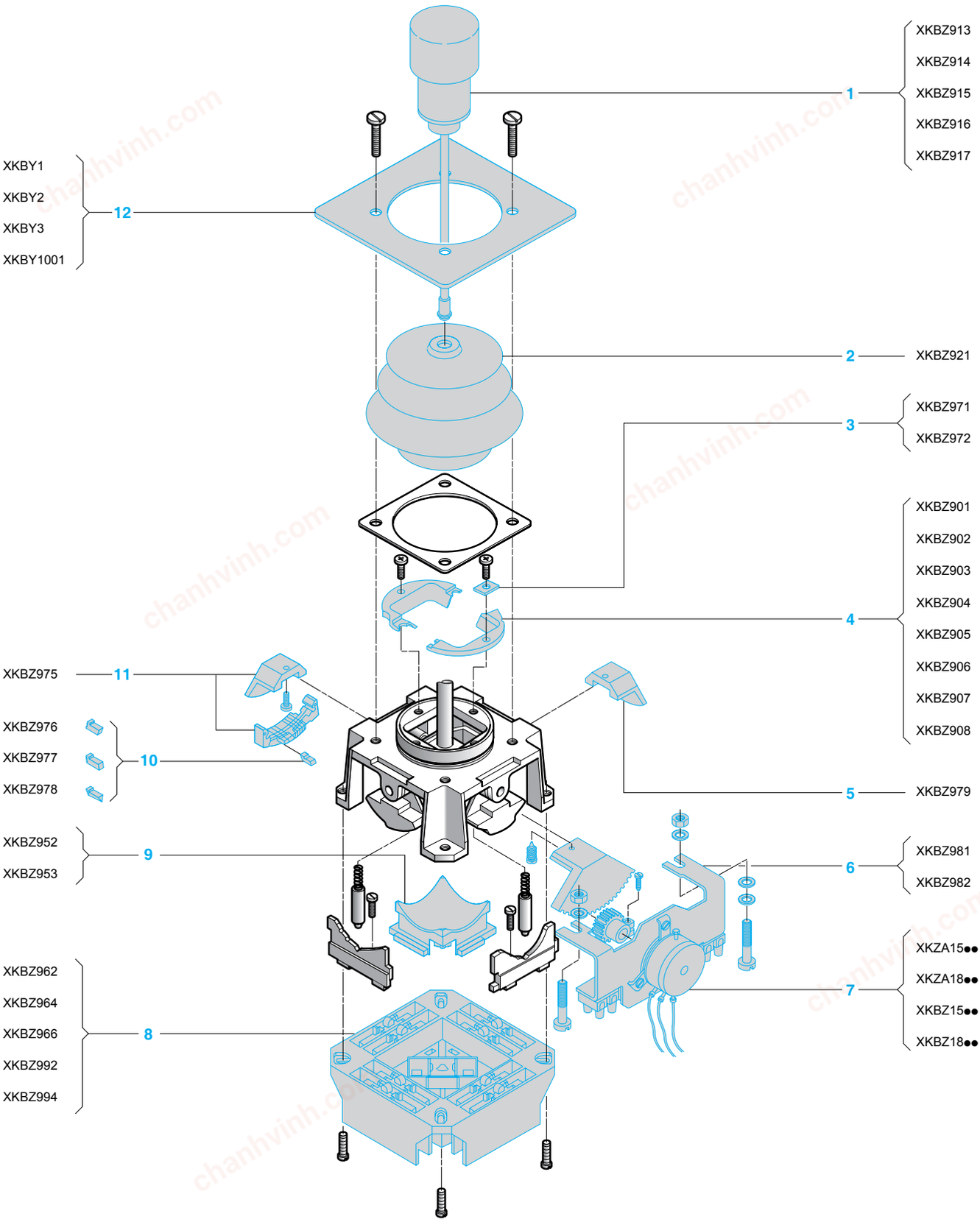
Orientation locater



(1) Additional help for completing the order form is available from your Regional Sales Office.
(2) 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.

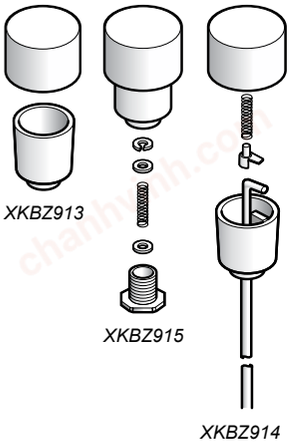
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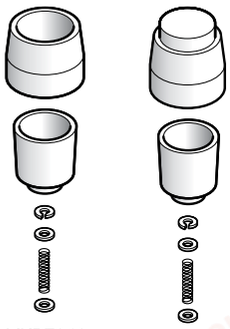
Controllers
For “light hoisting” applications, type **XKB**
Separate components

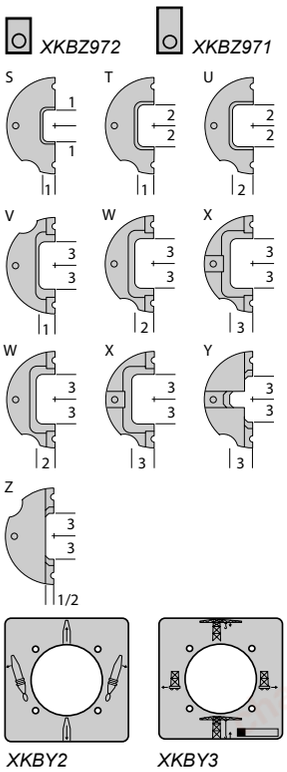


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Controllers
For “light hoisting” applications, type **XKB**
Separate components


XKBZ913 XKBZ915 XKBZ914


XKBZ916 XKBZ917



XKBY2 XKBY3

Description	Item	Characteristics	Unit reference	Weight kg/*lb*
Bellows	2	–	**XKBZ921**	0.060/0.*132*
Handles ⚠ Not interchangeable between different models	1	Simple	**XKBZ913**	0.030/0.*066*
		With zero (centre) position interlocking	**XKBZ914**	0.040/0.*088*
		“Dead man’s” type	**XKBZ915**	0.045/0.*099*
		With built-in flush pushbutton	**XKBZ916**	0.030/0.*066*
		With built-in projecting pushbutton	**XKBZ917**	0.030/0.*066*
Lever gate Universal and modifiable Specific, by adding half-gates to the universal lever gate (referenced by letter)	4	S	**XKBZ901**	0.005/0.*011*
		T	**XKBZ902**	0.005/0.*011*
		U	**XKBZ903**	0.005/0.*011*
		V	**XKBZ904**	0.005/0.*011*
		W	**XKBZ905**	0.005/0.*011*
		X	**XKBZ906**	0.005/0.*011*
		Y	**XKBZ907**	0.005/0.*011*
		Z	**XKBZ908**	0.005/0.*011*
Removable end stops Sold in lots of 10	3	Stop limiting to 1 notch of movement	**XKBZ971**	0.025/0.*055*
		Stop limiting to 2 notches of movement	**XKBZ972**	0.020/0.*044*
Contacts: block with 4 contacts per movement Screw clamp terminal connections	8	For use with simple handle or handle with zero (centre) position interlocking	**XKBZ962**	0.185/0.*408*
		For use with “Dead man’s” handle or handle with built-in pushbutton	**XKBZ966**	0.185/0.*408*
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	**XKBZ992**	0.215/0.*474*
		For use with “Dead man’s” handle or handle with built-in pushbutton	**XKBZ994**	0.215/0.*474*
Cam carriers for variable composition cams (XKBE only) Sold in lots of 20	11	–	**XKBZ975**	0.105/0.*231*
Cams (XKBE only) Sold in lots of 50	10	Right-hand position (color: Green)	**XKBZ976**	0.010/0.*022*
		Left-hand position (color: Red)	**XKBZ977**	0.010/0.*022*
		Pass cam (color: Black)	**XKBZ978**	0.010/0.*022*
Zero (centre) position cam with fixing screw	5	–	**XKBZ979**	0.010/0.*022*
Lever base adaptations	9	Interlocking bowl	**XKBZ952**	0.010/0.*022*
		Bowl for “Dead man’s” handle or handle with built-in pushbutton	**XKBZ953**	0.010/0.*022*
Legends	12	Blank	**XKBY1**	0.025/0.*055*
		“Traverse - slew”	**XKBY2**	0.025/0.*055*
		“Hoist - long travel”	**XKBY3**	0.025/0.*055*
		With specific engraved text	**XKBY1001**	0.025/0.*055*
Potentiometer adaptation kits *(1)*	6	Size 15	**XKBZ981**	0.090/0.*198*
		Size 18 *(2)*	**XKBZ982**	0.090/0.*198*
Potentiometers for controllers XKB	7	–	**XKZA15●●**, **A18●●** **XKBZ15●●**, **Z18●●** See pages 2/34 and 2/35	–

(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.

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



XKDF

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:
■ **XKDF**: controller with variable composition schemes.

Control lever
Length: 200 mm/*7.87 in.*. 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.

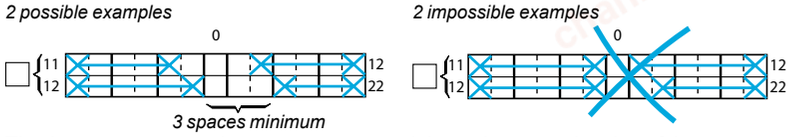
Note: *It is possible to use, on the same movement, a “5 notch max.” cam carrier combined with a “3 notch max.” cam carrier. The lever operation is “5 notch” type.*

■ **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 2/3) 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.

Characteristics: pages 2/11
Referencing grid: page 2/12
Dimensions: page 2/31

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Characteristics

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

Environment

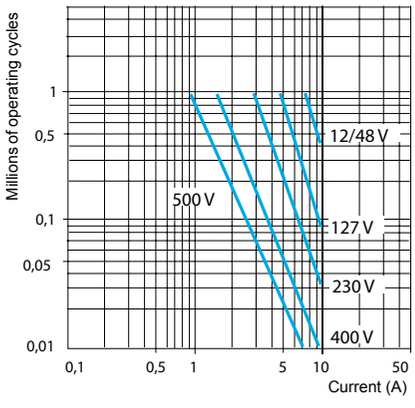
Conformity to standards			EN/IEC 60947-5-1, CSA C22-2 n° 14	
Product certifications			CSA A600, Q 600, CCC, RMRS	
Protective treatment			Standard version “TC”	
Ambient air temperature	For storage	**°C/°F**	- 40…+ 70/*-40…158*	
	For operation	**°C/°F**	- 20…+ 70/*-4…158*	
Operating position			All positions	
Vibration resistance	Conforming to IEC 60068-2-6		2 gn (10 to 500 Hz)	
Shock resistance	Conforming to IEC 60068-2-27		15 gn, duration 11 ms	
Electric shock protection	Conforming to IEC 61140		Class I	
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	Conforming to IEC 60529		IP 54 (unit with simple handle mounted in dust and damp proof enclosure)	
Mechanical durability	In millions of operating cycles		**XKDF:** 3 in each direction	
Weight	**XKDF**	**kg/*lb***	Mechanical block: 0.950/*2.094* 4-contact assembly: 0.350/*0.771* 8-contact assembly: 0.560/*1.234*	

Contact block characteristics

Type		N/C contact (**ZB2BE102**)
Conventional thermal current	**A**	10 conforming to EN/IEC 60947-5-1, CSA C 22-2 n° 14
Rated insulation voltage	**V**	⎓ 500 conforming to EN/IEC 60947-1, degree of pollution 3
Contact operation		Slow break, double-break contacts with positive opening operation
Resistance across terminals	**mΩ**	⩽ 25
Terminal referencing		Conforming to EN 50013
Short-circuit protection		10 A cartridge fuse type gG conforming to EN/IEC 60947-5-1

Operational power
Conforming to EN/IEC 60947-5-1 Appendix C
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**
⎓	65	48	40

Connection	Captive screw clamp terminals Clamping capacity: □ minimum 1 x 0.5 mm², □ maximum, with or without cable end: 2 x 1.5 mm² or 1 x 2.5 mm²

Presentation: page 2/10
Referencing grid: page 2/12
Dimensions: page 2/31

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Referencing grid

Controllers

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

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
XKDF		**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									
Movement not required (blocked)					**0**				
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 (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									
Movement not required (blocked)								**0**	
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 movement recommended when using a potentiometer.
(5) Potentiometer type and value to be stated on the order form, see page 2/34.
(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.

Presentation: page 2/10 Characteristics: page 2/11 Dimensions: page 2/31

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Order form example (1)

Controllers

For "medium hoisting" applications, type **XKDF**

Ordering form completion example

(Information given by customers are indicated in blue)

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 2/12)

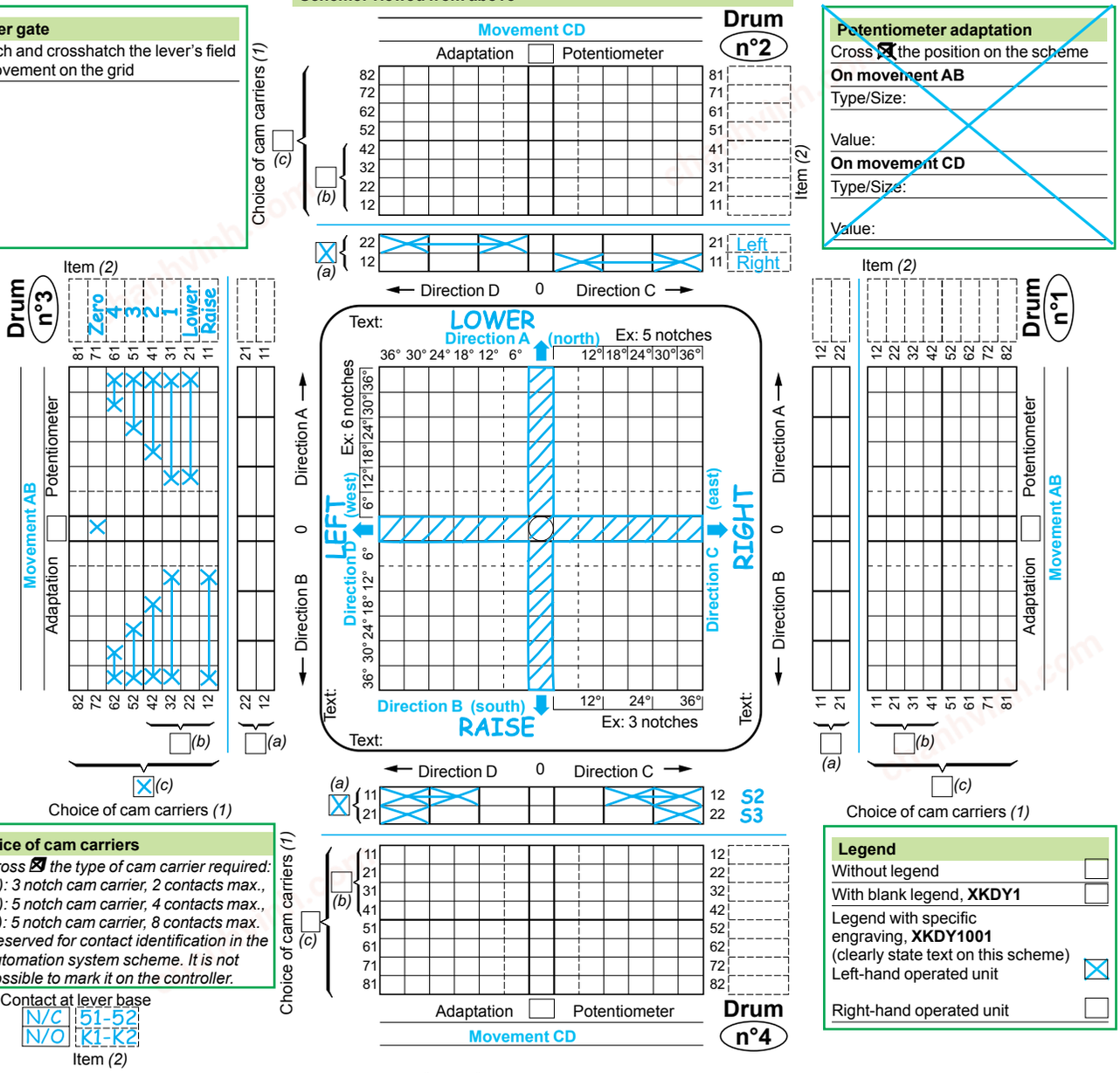
			Lever	Handle	Movement AB			Movement CD		
					No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation
Number of identical units	1	**XKDF**	1	2	4	4	0	2	3	0

For Schneider Electric Industries use only													
Order N°	Item N°		MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
		XKD												

Lever gate

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

Scheme: viewed from above



Potentiometer adaptation

Cross ☒ the position on the scheme

On movement AB

Type/Size:

Value:

On movement CD

Type/Size:

Value:

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

N/C	51-52
N/O	K1-K2

Item (2)

Legend

Without legend	☐
With blank legend, **XKDY1**	☐
Legend with specific engraving, **XKDY1001** (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.

(1) Additional help for completing the order form is available from your Regional Sales Office.

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Controller selection example

Controllers

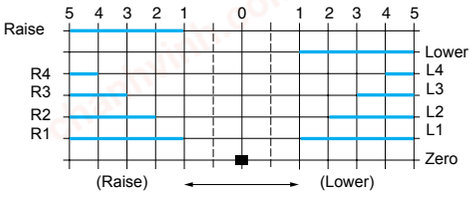
For “medium hoisting” applications, type **XKDF**

Controller selection example

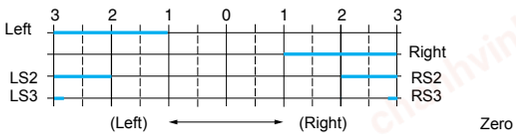
Requirement

A 2 movement controller: “hoist-traverse”.
“Cross” type lever gate.
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 4 contacts, a 2-contact block can be selected (drum n° 2), which does not increase the size of the base, together with 1 x 2-contact block (drum n° 4).
The lever gate will limit the lever travel to 3 notches.

Presentation: page 2/10
Characteristics: page 2/11
Dimensions: page 2/31

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Controller selection example (continued)

Controllers

For “medium hoisting” applications, type **XKDF**
Controller selection example

Composition of the reference (see page 2/12)

XKDF	1	2	4	4	0	2	3	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 blocks — 4

Type of lever movement
5 notched positions, with spring return to zero operation — 4

Potentiometer adaptation
Without adaptation nor potentiometer — 0

Movement CD “traverse”

Number of 2-contact blocks
2 blocks — 2

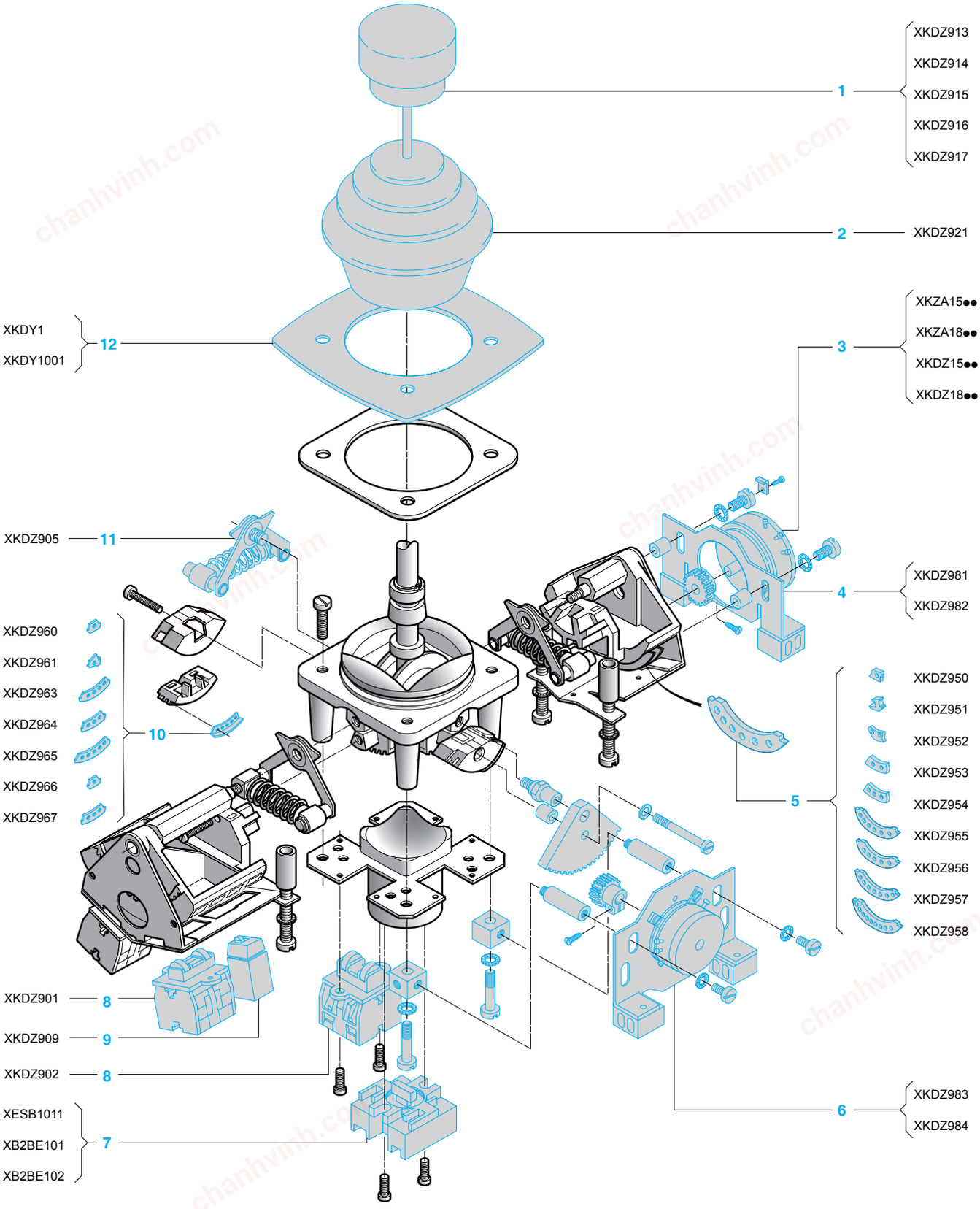
Type of lever movement
3 notched positions, with spring return to zero operation — 3

Potentiometer adaptation
Without adaptation nor potentiometer — 0

Presentation: page 2/10
Characteristics: page 2/11
Dimensions: page 2/31

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Controllers
For “medium hoisting” applications, type **XKDF**
Separate components

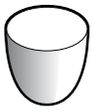


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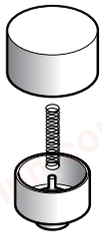
Controllers

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

Separate components



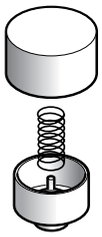
XKDZ913



XKDZ914



XKDZ915



XKDZ916



XKDZ917

Description	Item	Characteristics		Unit reference	Weight kg/*lb*
Bellows	2	Bellows + 1 flat seal		**XKDZ921**	0.075/0.*165*
Handles ⚠ Not interchangeable between different models	1	Simple		**XKDZ913**	0.060/0.*132*
		With zero (centre) position interlocking		**XKDZ914**	0.035/0.*077*
		“Dead man’s” type		**XKDZ915**	0.040/0.*088*
		With built-in flush pushbutton		**XKDZ916**	0.050/0.*110*
		With built-in projecting pushbutton		**XKDZ917**	0.050/0.*110*
Spring return operation mechanism Sold in lots of 2	11	Spring return to zero mechanism		**XKDZ905**	0.100/0.*220*
Notched operation mechanism	9	Position notching mechanism for variable composition cams		**XKDZ909**	0.010/0.*022*
Variable composition cams for support with 4 or 8 contacts Sold in lots of 50	5	Pass cam		**XKDZ950**	0.005/0.*011*
		Complementary, 1 position		**XKDZ951**	0.005/0.*011*
		Complementary, 1.5 position		**XKDZ952**	0.010/0.*022*
		Complementary, 2 positions		**XKDZ953**	0.010/0.*022*
		Complementary, 3 positions		**XKDZ954**	0.020/0.*044*
		Complementary, 6 positions		**XKDZ955**	0.035/0.*077*
		5 positions		**XKDZ956**	0.030/0.*066*
		7 positions		**XKDZ957**	0.040/0.*088*
		9 positions		**XKDZ958**	0.050/0.*110*
Variable composition cams for support with 2 contacts Sold in lots of 20	10	Complementary, half-position		**XKDZ960**	0.005/0.*011*
		Complementary, 1 position		**XKDZ961**	0.005/0.*011*
		Reversing, for notches 1+ 2 + 3		**XKDZ963**	0.020/0.*044*
		Acceleration, for notches 2 + 3		**XKDZ964**	0.005/0.*011*
		Acceleration, for notch 3		**XKDZ965**	0.010/0.*022*
		Pass cam		**XKDZ966**	0.010/0.*022*
		Cam for zero position contact		**XKDZ967**	0.010/0.*022*
Scheme contacts	8	2 x ZB2BE102 contacts mounted on baseplate	Without marker	**XKDZ901**	0.050/0.*110*
			With marker	**XKDZ902**	0.050/0.*110*
Zero (centre) position electrical interlocking C/O contact	7	Snap action		**XESB1011**	0.030/0.*066*
Contacts for “Dead man’s” handle or handle with built-in pushbutton	7	Slow break	N/C, positive opening	**ZB2BE102**	0.015/0.*033*
			N/O	**ZB2BE101**	0.015/0.*033*
Legends	12	Blank		**XKDY1**	0.035/0.*077*
		With specific engraved text		**XKDY1001**	0.035/0.*077*
Potentiometer adaptation kits *(1)*	4	On end of contact supports	Size 15	**XKDZ981**	0.120/0.*265*
			Size 18	**XKDZ982**	0.130/0.*287*
	6	Directly on mechanical block	Size 15	**XKDZ983**	0.120/0.*265*
			Size 18	**XKDZ984**	0.130/0.*287*
Potentiometers for controllers XKD	3	–		**XKZA15●●**, **A18●●** **XKDZ15●●**, **Z18●●** See pages 2/34 and 2/35	–

(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.

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Controllers
For “heavy hoisting” applications, type **XKM**

109231_33_M



XKMA

109232_37_M



XKMB

109233_38_M



XKMC

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:
■ **XKMA**: with variable composition schemes, multidirectional control of 2 movements by central lever.
■ **XKMB**: with variable composition schemes, control of 1 movement by central lever.
■ **XKMC**: with variable composition schemes, control of 1 movement by side lever.

Control lever
XKMA and **XKMB**: length: 200 or 250 mm/*7.87 or 9.84 in.*. Travel in each direction: 36° max.
XKMC: side lever, length 240 mm/*9.45 in.*. Travel in each direction: 54° max.

Lever gate
XKMA: universal or specific (must be specified on Order form).
XKMB and **XKMC:** no lever gate.

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

Handle
XKMA and **XKMB**; 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.
XKMC: simple handle.

Electrical positions
XKMA and **XKMB:** 6 positions maximum in each direction.
XKMC: 9 positions maximum in each direction.

Type of lever movement
■ **Notched positions, with stayput operation.**
XKMA and **XKMB**; 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).*

XKMC, 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**.
XKMA, 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**:
XKMA, 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.

Characteristics: page 2/19
Referencing grid: page 2/20
Dimensions: page 2/32

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Controllers
For “heavy hoisting” applications, type **XKM**

Environment

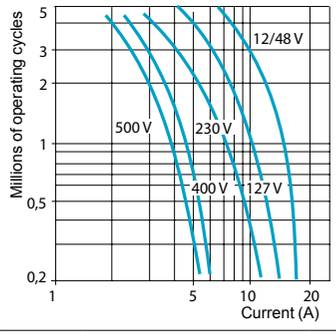
Conformity to standards			EN/IEC 60947-5-1, CSA C22-2 n° 14
Product certifications			CSA A600, RRS
Protective treatment			Standard version “TC”
Ambient air temperature	For storage	**°C/°F**	- 40…+ 70/*-40…158*
	For operation	**°C/°F**	- 10…+ 55/14…131
Operating position			All positions
Vibration resistance	Conforming to IEC 60068-2-6		2 gn (10 to 500 Hz)
Shock resistance	Conforming to IEC 60068-2-27		Direction of shocks on vertical axis: 15 gn Direction of shocks on horizontal and transversal axes: 100 gn
Electric shock protection	Conforming to IEC 61140		Class I
Maximum operating lever force required in each direction		**daN**	< 4 for 4 simultaneously actuated contacts (to 1st notch) < 4.5 for 4 simultaneously actuated contacts for spring return to zero version (maintained against end stop)
Degree of protection	Conforming to IEC 60529		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/*lb***	**XKMA:** mechanical block: 4.6. 4-contact assembly: 0.7/*1.543* **XKMB:** mechanical block: 3. 4-contact assembly: 0.7/*1.543* **XKMC:** mechanical block: 3.7. 4-contact assembly: 0.7/*1.543*

Contact block characteristics

Type		Block of 4 double-break contacts
Conventional thermal current	**A**	16 conforming to EN/IEC 60947-5-1
Rated insulation voltage	**V**	⎓ 500 conforming to EN/IEC 60947-1 degree of pollution 3 ⎓ 600 conforming to CSA C22-2 n° 14
Contact operation		Slow break, double-break contacts with positive opening operation 2 versions: standard or with magnetic blow-out
Resistance across terminals	**mΩ**	⩽ 25
Terminal referencing		Conforming to EN 50013
Short-circuit protection		20 A cartridge fuse type gG conforming to EN/IEC 60947-5-1

Operational power
Conforming to EN/IEC 60947-5-1 Appendix C
Utilisation categories AC-15 and DC-13
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 mm², □ maximum: 2 x 2.5 mm² with cable end

.

Presentation: page 2/18
Referencing grid: page 2/20
Dimensions: page 2/32

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Referencing grid

Controllers

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

Grid for composing the reference of a controller XKMA or XKMB

Reference of a controller type XKMA or XKMB

	Model	Lever	Handle	Contacts	Movement AB: No. of blocks	Movement AB: Lever movement	Movement AB: Potentiometer adaptation	Movement CD (XKMA only): No. of blocks	Movement CD (XKMA only): Lever movement	Movement CD (XKMA only): Potentiometer adaptation
XKM										

Model

2 movement controller (AB + CD)	**A**
1 movement controller (AB)	**B**

Control lever

Short: length 200 mm/*7.87 in.* (standard)	**1**
Long: length 250 mm/*9.842 in.*	**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

Movement not required (blocked)			**0**
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 XKMA 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

Movement not required (blocked)			**0**
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 movement 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 2/34 and 2/35.

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Controller selection example

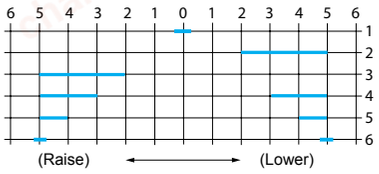
Controllers
For “heavy hoisting” applications, type **XKMA**
Controller selection example

Requirement

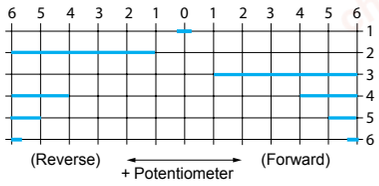
A 2 movement controller: “hoist-long travel”.
Universal 200 mm/*7.87 in.* lever gate, limited to 4 notches on the “raise” and “lower” directions (1st notch at 12°).
Potentiometer adaptation on movement CD. Potentiometer selected: 4700 Ω, size 15, standard model.
“Dead man’s” handle with 1 C/O contact.

Movement AB: type of lever movement: notched positions, with spring return to zero operation and 5 notches (starting from 12°).
Movement CD: type of lever movement: unnotched positions, with spring return to zero operation.

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 on next page),
- 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 on next page),
- Directly on the mechanical block.

Composition of the reference (see page 2/20)

XKM	A	1	4	1	2	5	0	2	7	2

Model
2 movements (AB + CD) — **A**

Control lever
Short: length 200 mm (standard) — **1**

Handle
“Dead man’s” type with 1 C/O contact — **4**

Type of contacts
Standard double-break — **1**

Movement AB

Number of 4-contact blocks
2 blocks (i.e. 8 contacts when 6 contacts required) — **2**

Type of lever movement
Notched positions, with spring return to zero operation and 5 notch sectors (starting from 12°) — **5**

Potentiometer
Without adaptation device nor potentiometer — **0**

Movement CD

Number of 4-contact blocks
2 blocks (i.e. 8 contacts when 6 contacts required) — **2**

Type of lever movement
Unnotched positions, with spring return to zero operation — **7**

Potentiometer
With potentiometer adaptation device + size 15, 4700 Ω potentiometer — **2**

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Order form example (1)

Controllers

For "heavy hoisting" applications, type **XKMA**

Ordering form completion example
(Information given by customers is indicated in blue)

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

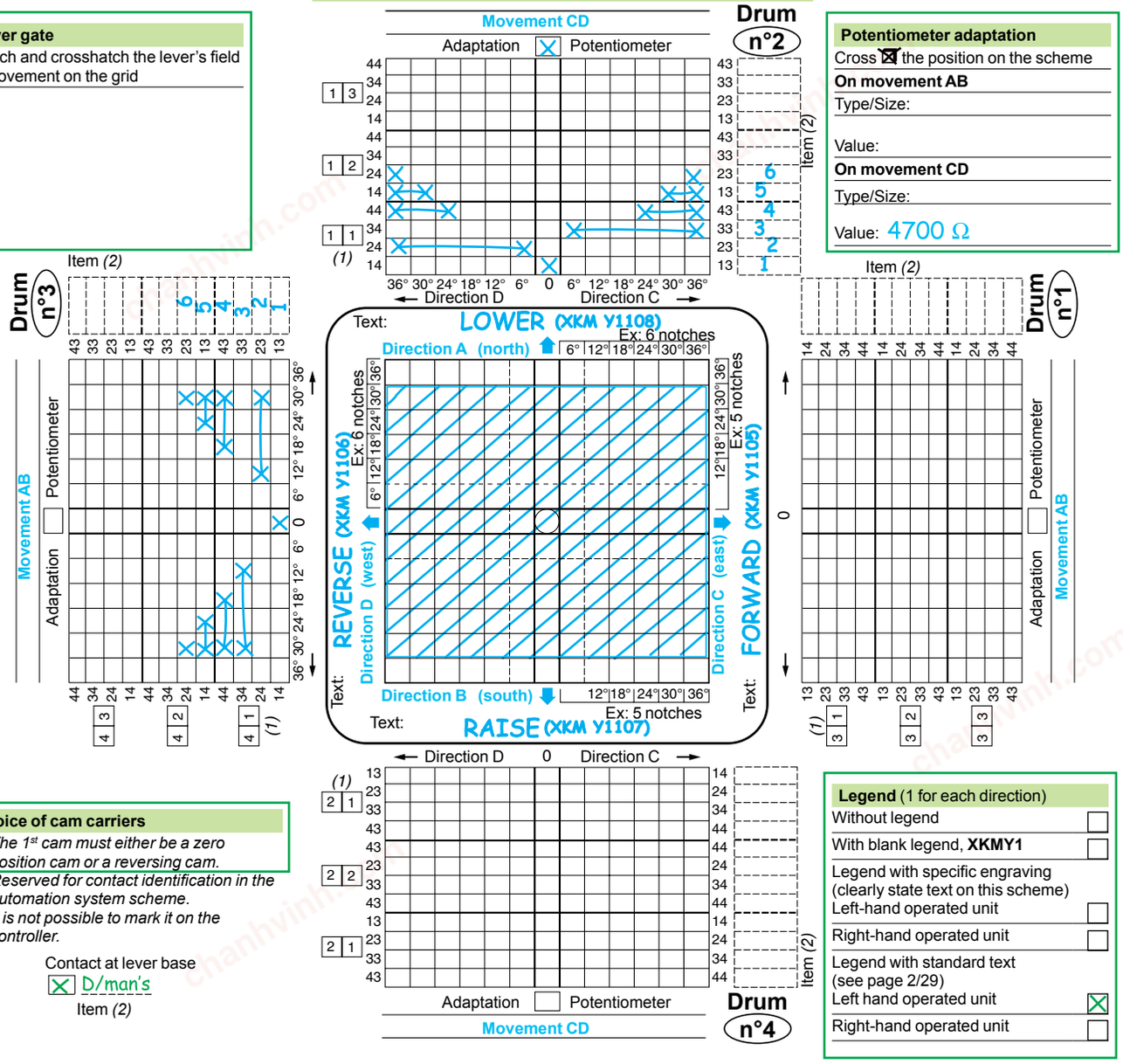
Reference (use the grid for composing the reference of a controller on page 2/20)

		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	1	XKM	A	1	4	1	2	5	0	2	7	2

For Schneider Electric use only

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

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

☒ D/man's

Item (2)

Legend (1 for each direction)

Without legend	☐
With blank legend, **XKMY1**	☐
Legend with specific engraving (clearly state text on this scheme) Left-hand operated unit	☐
Right-hand operated unit	☐
Legend with standard text (see page 2/29) 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.

(1) Additional help for completing the order form is available from your Regional Sales Office.

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Controller selection example

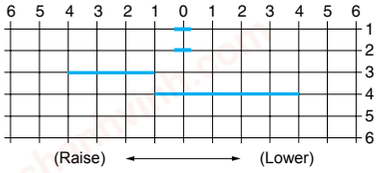
Controllers

For “heavy hoisting” applications, type **XKMB**
Controller selection example

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 2/20)

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**

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Order form example (1)

Controllers
For “heavy hoisting” applications, type **XKMB**
Ordering form completion example

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

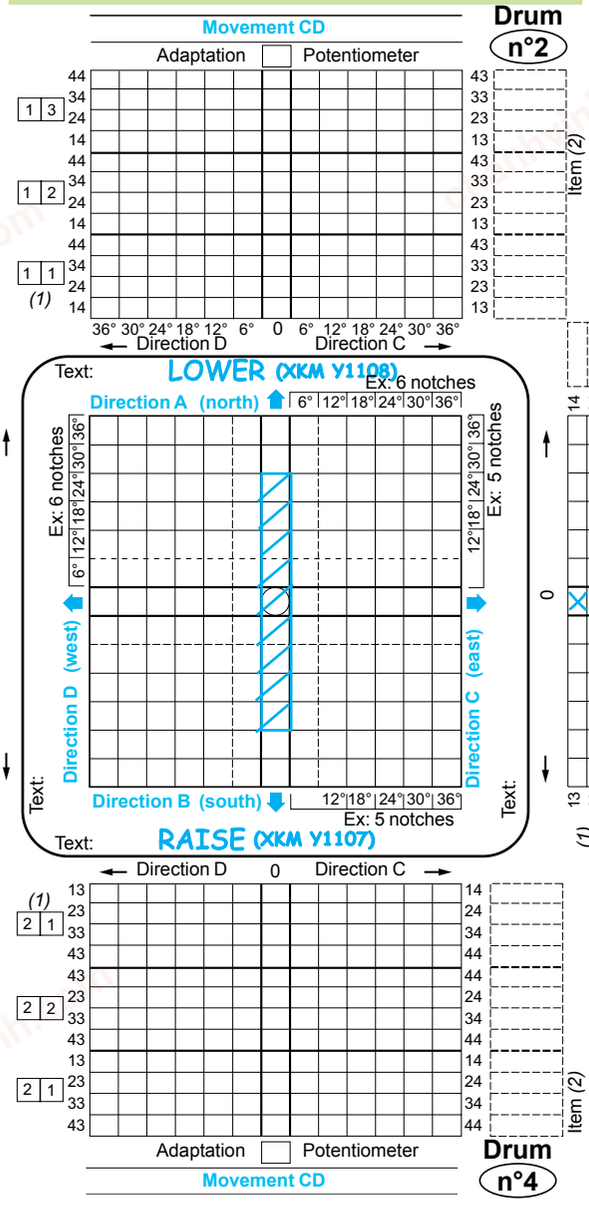
Reference (use the grid for composing the reference of a controller on page 2/20)

		Model	Lever	Handle	Type of contact	Movement AB: No. of blocks	Movement AB: Lever movement	Movement AB: Potentiometer adaptation	Movement CD: No. of blocks	Movement CD: Lever movement	Movement CD: Potentiometer adaptation
Number of identical units	1	XKM	B	1	1	1	1	6	0			

For Schneider Electric Industries use only													
Order N°	Item N°		MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
		XKM												

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
☐ ☐ Item (2)

Legend (1 for each direction)

Without legend	☐
With blank legend, **XKMY1**	☐
Legend with specific engraving (clearly state text on this scheme) Left-hand operated unit	☐
Right-hand operated unit	☐
Legend with standard text (see page 2/29) 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.

(1) Additional help for completing the order form is available from your Regional Sales Office.

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Controllers

For “heavy hoisting” applications, type **XKMC**

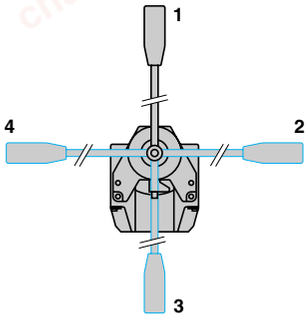
Grid for composing the reference of a controller

Reference of controller type XKMC

		Lever	Contacts	Movement AB		
				No. of blocks	Lever movement	Potentiometer adaptation
XKMC						

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 movement 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 2/34.

Presentation: page 2/18
Characteristics: page 2/19
Dimensions: page 2/33

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Controller selection example

Controllers
For “heavy hoisting” applications, type **XKMC**
Controller selection example

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.

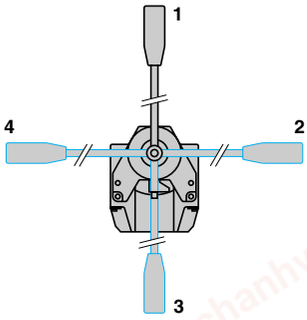
Lever movement with 6 notches at 6° intervals (1st mechanical notch at 6°), with notched cams and stayput angular positions.
No potentiometer.

Composition of the reference (see page 2/25)

	Lever	Contacts	Movement AB: No. of blocks	Movement AB: Lever movement	Movement AB: Potentiometer adaptation
XKMC	**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 movement 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 2/34.

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Order form example (1)

Controllers

For “heavy hoisting” applications, type **XKMC**

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 2/25)

			Model	Lever	Contacts	Movement AB		
						No. of blocks	Lever movement	Potentiometer adaptation
Number of identical units	1	XKM	C	1	1	2	3	0

For Schneider Electric Industries use only								
Order N°	Item N°		MOD	LEV	POI	GLV	CTS	MAN	POT
		XKM							

Potentiometer adaptation

Cross ☒ the required position on the scheme below.

On movement AB

Type/size:

Value:

Legend

Without legend ☐

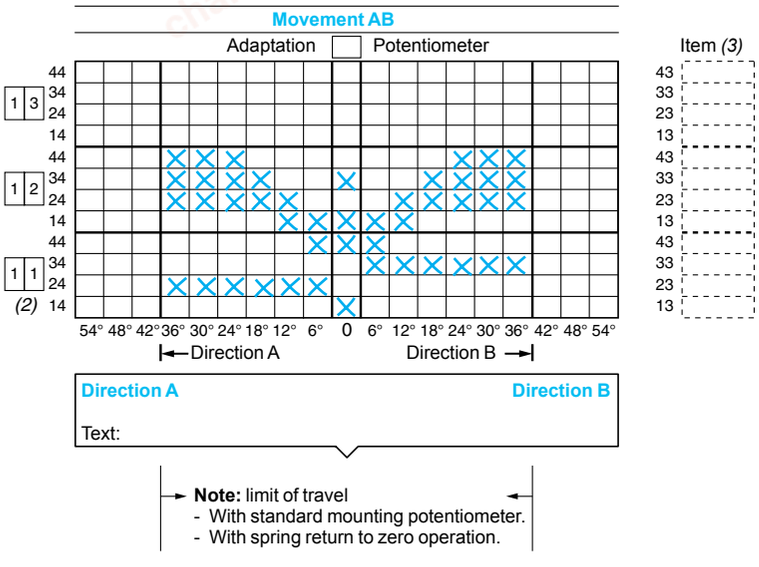
Blank legend, **XKMCY1** ☒

Legend with specific engraving, **XKMY1001** (clearly state the text on the scheme below)

Left-hand operated unit ☐

Right-hand operated unit ☐

Scheme (viewed from above)

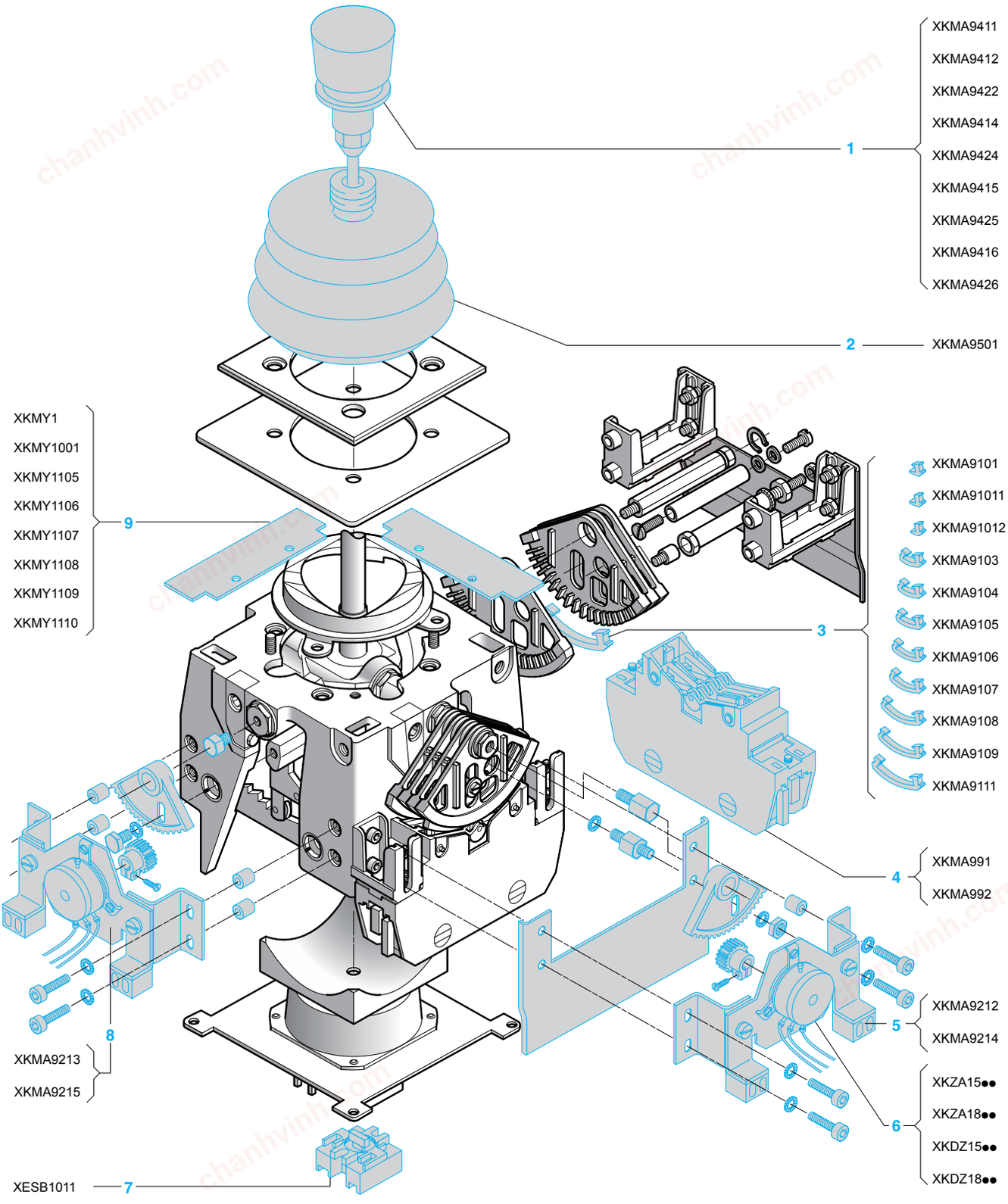


⚠ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

(1) Additional help for completing the order form is available from your Regional Sales Office.
(2) The 1st cam must either be a zero position cam or a reversing cam.
(3) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.

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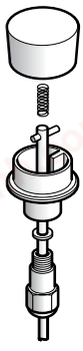
Controllers
For “heavy hoisting” applications, type **XKM**
Separate components

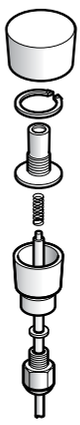


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Controllers
For “heavy hoisting” applications, type **XKM**
Separate components


XKMA9411


XKMA94●4


XKMA94●2


XKMA94●5


XKMA94●6

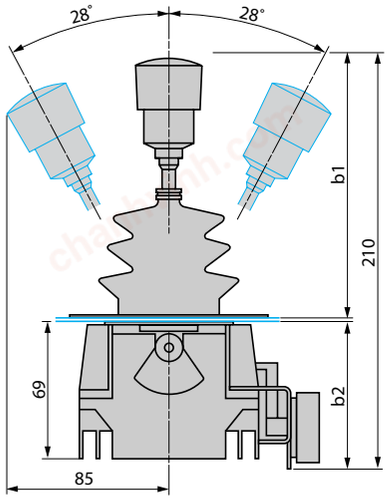
Description	Item	Characteristics		Unit reference	Weight kg/*lb*
Bellows	2	–		**XKMA9501**	0.120/0.*265*
Simple handle	1	–	For short or long lever	**XKMA9411**	0.085/0.*187*
Handles + rods	1	With zero (centre) position interlocking	For short lever	**XKMA9414**	0.145/0.*320*
			For long lever	**XKMA9424**	0.155/0.*342*
		“Dead man’s” type	For short lever	**XKMA9412**	0.150/0.*331*
			For long lever	**XKMA9422**	0.160/0.*353*
		With built-in flush pushbutton	For short lever	**XKMA9415**	0.140/0.*309*
			For long lever	**XKMA9425**	0.150/0.*331*
		With built-in projecting pushbutton	For short lever	**XKMA9416**	0.140/0.*309*
			For long lever	**XKMA9426**	0.150/0.*331*
Variable composition cams Sold in lots of 50	3	Pass cam		**XKMA9101**	0.115/0.*253*
		Complementary		**XKMA91011**	0.120/0.*265*
		Overlapping		**XKMA91012**	0.105/0.*231*
		3 positions		**XKMA9103**	0.205/0.*452*
		4 positions		**XKMA9104**	0.245/0.*540*
		5 positions		**XKMA9105**	0.370/0.*816*
		6 positions		**XKMA9106**	0.400/0.*882*
		7 positions		**XKMA9107**	0.430/0.*948*
		8 positions		**XKMA9108**	0.460/*1.014*
		9 positions		**XKMA9109**	0.505/*1.113*
		11 positions		**XKMA9111**	0.560/*1.235*
Blocks of 4 contacts	4	Double-break		**XKMA991**	0.310/0.*683*
		Double-break with magnetic blow-out		**XKMA992**	0.335/0.*739*
Contact at lever base	7	1 C/O snap action		**XESB1011**	0.030/0.*066*
Legends	9	Blank		**XKMY1**	0.010/0.*022*
		With specific engraving (specify text when ordering)		**XKMY1001**	0.010/0.*022*
		With standard text	Forward	**XKMY1105**	0.010/0.*022*
			Reverse	**XKMY1106**	0.010/0.*022*
			Raise	**XKMY1107**	0.010/0.*022*
			Lower	**XKMY1108**	0.010/0.*022*
			Left	**XKMY1109**	0.010/0.*022*
			Right	**XKMY1110**	0.010/0.*022*
Potentiometer adaptation kits *(1)*	5	On end of contact supports	Size 15	**XKMA9214**	0.120/0.*265*
			Size 18	**XKMA9212**	0.130/0.*287*
	8	Directly on mechanical block	Size 15	**XKMA9215**	0.120/0.*265*
			Size 18	**XKMA9213**	0.130/0.*287*
Potentiometers for controllers XKMA, XKMB, XKMC	6	–		**XKZA15●●, A18●●** **XKDZ15●●, Z18●●** See pages 2/34 and 2/35	–

(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.*

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Controllers
For “light hoisting” applications, type **XKB**

XKBA, XKBE

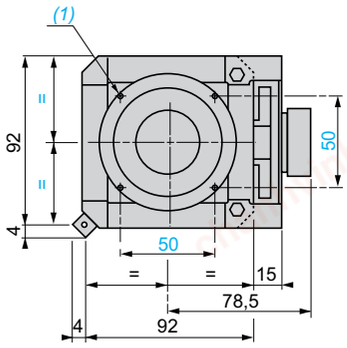


		b1	b2
XKBA, XKBE	**with size 15 (3 W) potentiometer**	129…134	75
	with size 18 (4 W) potentiometer	129…134	80

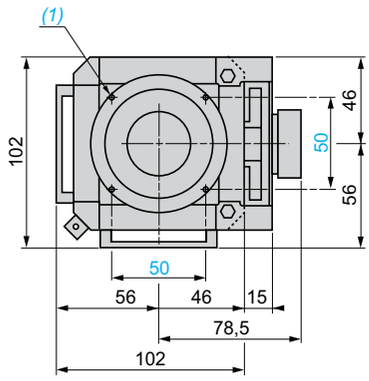
(1) Fixing by 4 M5 screws.

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

4-contact block

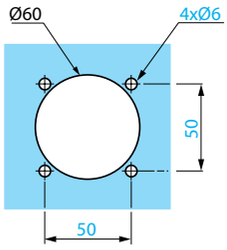


4-contact block + 1 zero position contact



Panel cut-out

thickness 1 to 6 mm/*0.04 to 0.24 in.*



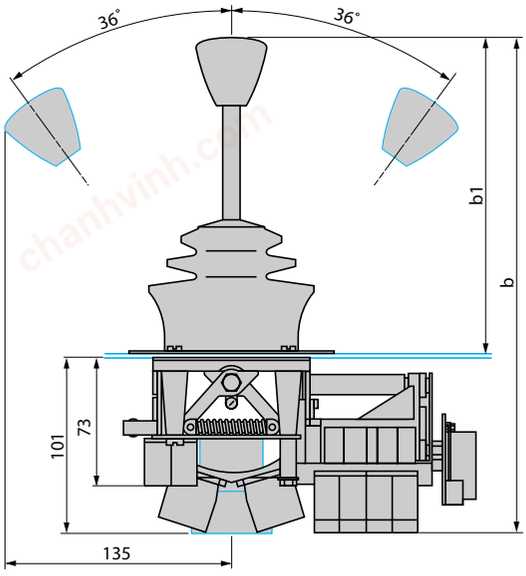
Presentation: page 2/4
Characteristics: page 2/5
Order form: page 2/6

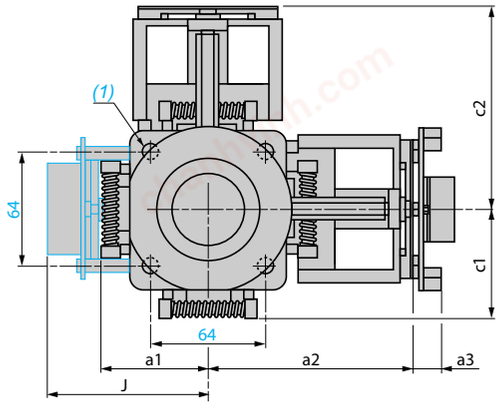
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Dimensions

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

XKDF





		b	b1
XKDF	**with short lever**	288	181…186
	with long lever	338	236…241

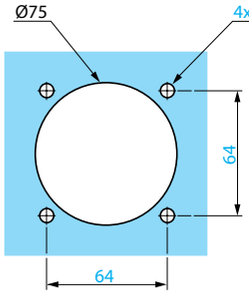
		a1	a2	c1	c2
XKDF	**with 2 contacts**	52	–	52	–
	with 2 contacts + spring return to zero	65	–	65	–
	with 4 contacts	–	90	–	90
	with 8 contacts	–	120	–	120

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

(1) Fixing by 4 M6 screws.

Panel cut-out

thickness 1 to 6 mm/*0.04 to 0.24 in.*

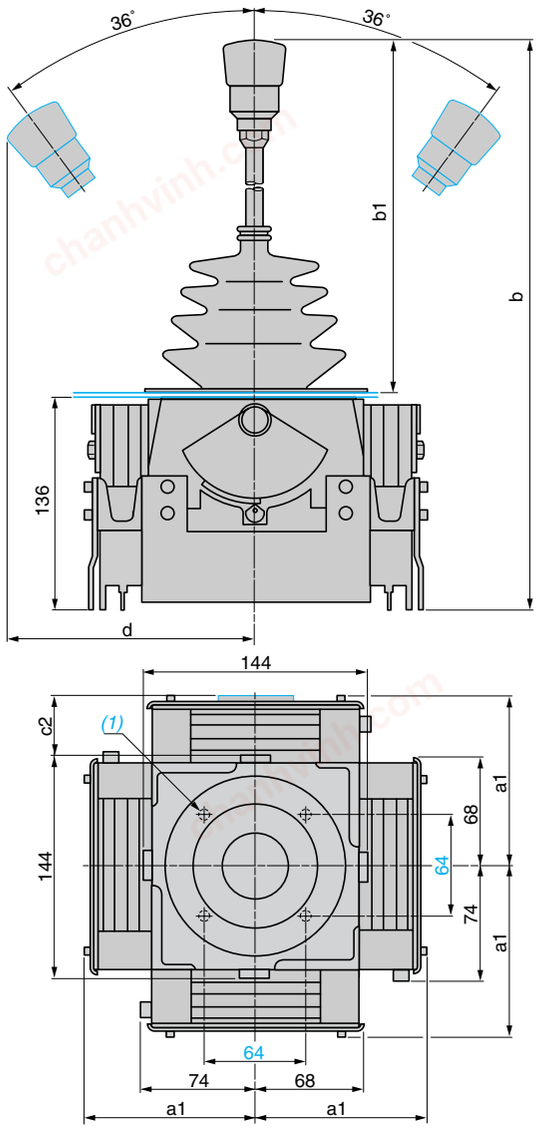


Presentation: page 2/10
Characteristics: page 2/11
Order form: page 2/13

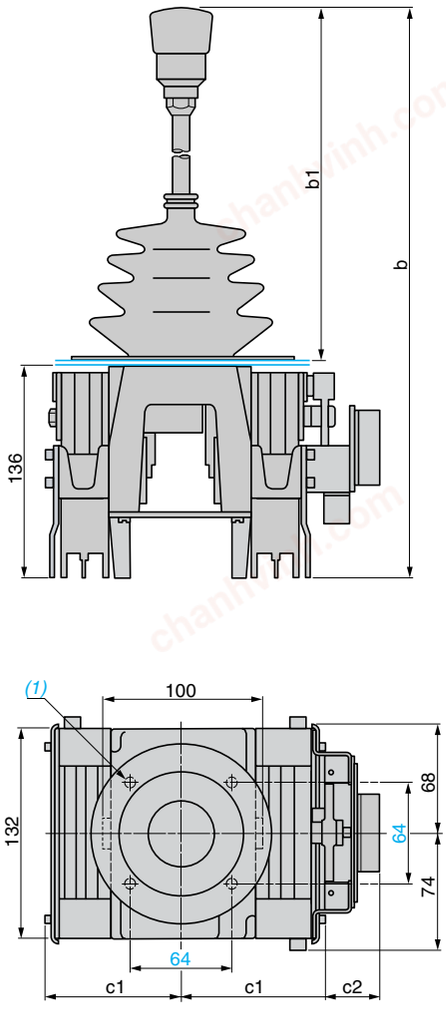
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Controllers
For “heavy hoisting” applications, type **XKM**

XKMA



XKMB



		b	b1	d
XKMA, XKMB	**with short lever**	322	180 to 185	125
	with long lever	392	230 to 235	125

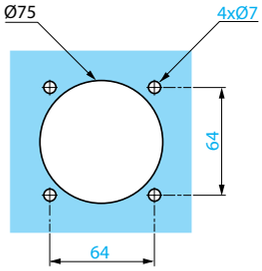
		a1	c1
XKMA, XKMB	**with 4 contacts**	110	88
	with 8 contacts	140	118
	with 12 contacts	170	148

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

(1) Fixing by 4 M6 screws.

Panel cut-out

thickness 1 to 6 mm/*0.04 to 0.24 in.*



Presentation:
page 2/18

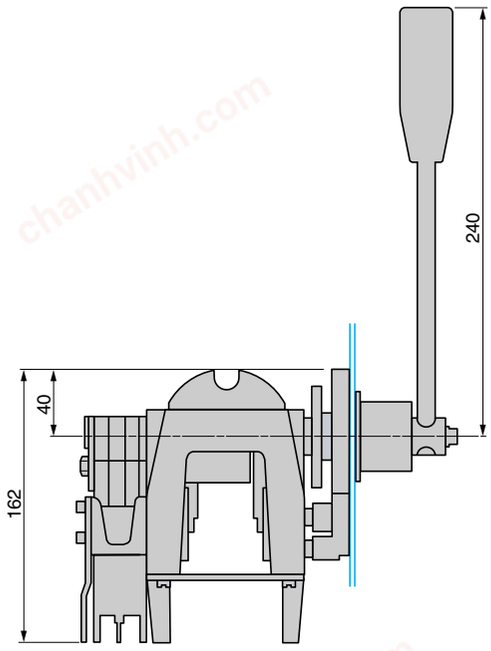
Characteristics:
page 2/19

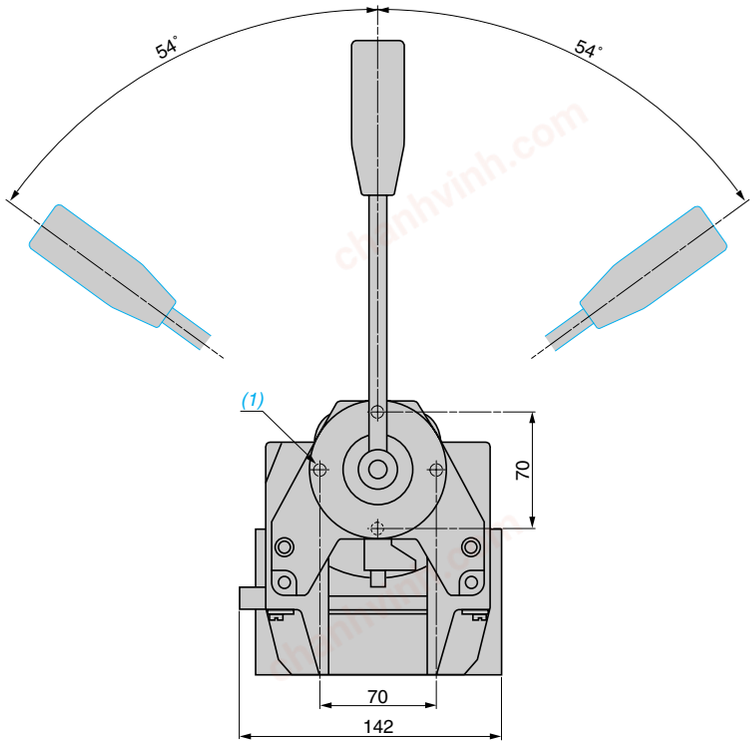
Order form:
pages 2/22 to 2/24

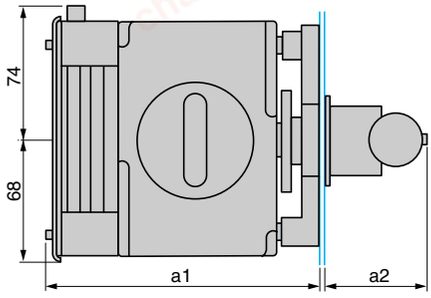
Schneider Electric

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XKMC





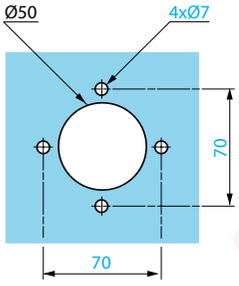


		a1	a2
XKMC	**with 4 contacts**	157	36 to 41
	with 8 contacts	187	36 to 41
	with 12 contacts	217	36 to 41

(1) Fixing by 4 M6 screws.

Panel cut-out

thickness 1 to 6 mm/*0.04 to 0.24 in.*



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Characteristics, references, dimensions, connection schemes

Controllers

Potentiometers for controllers

For standard applications, type **XKZA**

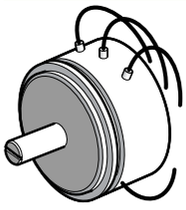
Mechanical characteristics

Potentiometer type	XKZA15●●●	XKZA18●●●
Size	15	18
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

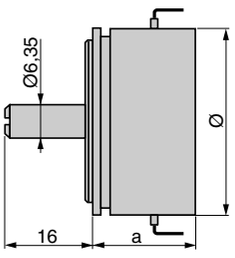


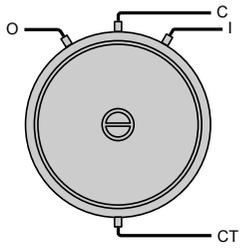
XKZA1●●●●

Resistance value Ω	Availability	Size	Reference	Weight kg/*lb*
4700 (2 x 2350)	Stock item	15	**XKZA15047**	0.060/0.*132*
	Short delivery	18	**XKZA18047**	0.060/0.*132*
1000 (2 x 500)	Short delivery	15	**XKZA15010**	0.060/0.*132*
	On demand	18	**XKZA18010**	0.060/0.*132*
2200 (2 x 1100)	Short delivery	15	**XKZA15022**	0.060/0.*132*
	On demand	18	**XKZA18022**	0.060/0.*132*
10,000 (2 x 5000)	Stock item	15	**XKZA15100**	0.060/0.*132*
	On demand	18	**XKZA18100**	0.060/0.*132*
Other values	On demand	15	**XKZA15000** *(1)*	0.060/0.*132*
	On demand	18	**XKZA18000** *(1)*	0.060/0.*132*

(1) When ordering an XKZA15000 or XKZA18000, the total resistance value must be stated. The other characteristics are the same.

Dimensions

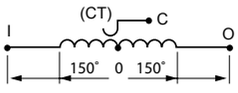




The pinion included with the adaptation simply clamps onto the potentiometer operating shaft (diameter 6.35 mm, length 16 mm).

	a	Ø
XKZA15●●●	20	36.5
XKZA18●●●	27	44.45

Connection



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

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Characteristics, references, dimensions, connection schemes

Controllers

Potentiometers for controllers

For applications requiring an extended "neutral zone", types **XKBZ** and **XKDZ**

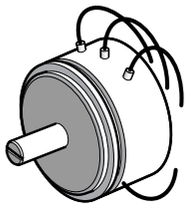
Mechanical characteristics

Potentiometer type	XKBZ15●●, XKDZ15●●	XKBZ18●●, XKDZ18●●
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



XKBZ1●●●, XKDZ1●●●

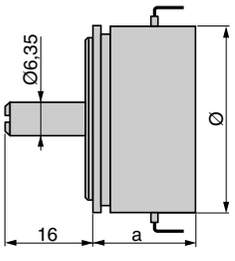
Potentiometers for controllers XKB

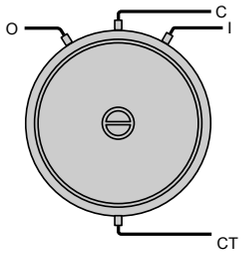
Resistance value Ω	Availability	Size	Reference	Weight kg/*lb*
4700 (2 x 2350)	On demand	15	**XKBZ1547**	0.055/0.*121*
	On demand	18	**XKBZ1847**	0.065/0.*143*
800 (2 x 400)	On demand	15	**XKBZ1508**	0.055/0.*121*
	On demand	18	**XKBZ1808**	0.065/0.*143*

Potentiometers for controllers XKD and XKM

4700 (2 x 2350)	Stock item	15	**XKDZ1547**	0.055/0.*121*
	On demand	18	**XKDZ1847**	0.065/0.*143*
800 (2 x 400)	On demand	15	**XKDZ1508**	0.055/0.*121*
	On demand	18	**XKDZ1808**	0.065/0.*143*

Dimensions



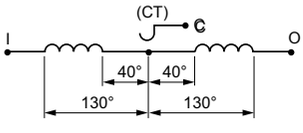


The pinion included with the adaptation simply clamps onto the potentiometer operating shaft (diameter 6.35 mm, length 16 mm).

	a	Ø
XKBZ15●●, XKDZ15●●	20	36.5
XKBZ18●●, XKDZ18●●	27	44.45

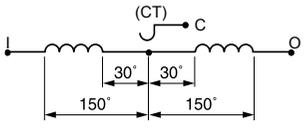
Connections

XKBZ15●●, XKBZ18●●



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

XKDZ15●●, XKDZ18●●



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

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3

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Contents

Controllers

Harmony XD

■ **References**

□ Complete units type XD2G, with chromium plated metal bezel *3/2*

□ Legend plates *3/3*

□ Contact block *3/3*

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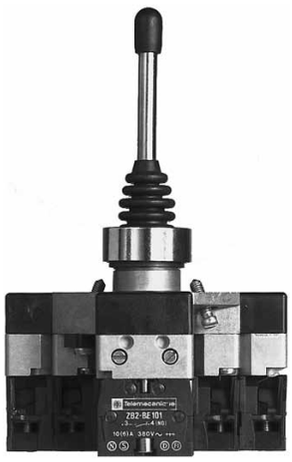
Control and signaling units Ø 22
Joystick controllers

94172



XD2GA8211

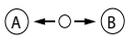
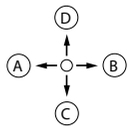
94173



XD2GA8441

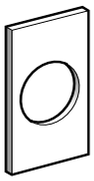
Complete units type XD2G, with chromium plated metal bezel

Interchangeable contacts

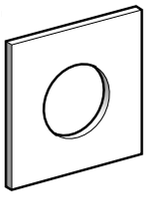
Description	Operation	Spring return to zero position	Bezel finish	Reference	Weight kg/*lb*
2 direction Fixing centres 90 x 90 mm/ *3.54 x 3.54 in.* 	1 notch 1 N/O contact per direction	Without	Shiny	**XD2GA8211**	0.300/*0.661*
			Black	**XD2GA82117**	0.300/*0.661*
		With	Shiny	**XD2GA8221**	0.300/*0.661*
			Black	**XD2GA82217**	0.300/*0.661*
	2 notches 2 N/O contacts per direction	Without	Shiny	**XD2GA8231**	0.500/*1.102*
			Black	**XD2GA82317**	0.500/*1.102*
		With	Shiny	**XD2GA8241**	0.500/*1.102*
			Black	**XD2GA82417**	0.500/*1.102*
		1st notch stay put 2nd notch with spring return to 1st notch	Shiny	**XD2GA8251**	0.500/*1.102*
			Black	**XD2GA82517**	0.500/*1.102*
4 direction Fixing centres 90 x 90 mm/ *3.54 x 3.54 in.* 	1 notch 1 N/O contact per direction	Without	Shiny	**XD2GA8411**	0.330/*0.728*
			Black	**XD2GA84117**	0.330/*0.728*
		With	Shiny	**XD2GA8421**	0.330/*0.728*
			Black	**XD2GA84217**	0.330/*0.728*
	2 notches 2 N/O contacts per direction	Without	Shiny	**XD2GA8431**	0.550/*1.213*
			Black	**XD2GA84317**	0.550/*1.213*
		With	Shiny	**XD2GA8441**	0.550/*1.213*
			Black	**XD2GA84417**	0.550/*1.213*
		1st notch stay put 2nd notch with spring return to 1st notch	Shiny	**XD2GA8451**	0.550/*1.213*
			Black	**XD2GA84517**	0.550/*1.213*

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Control and signaling units Ø 22
Joystick controllers


500846_1

ZD2GY5201


500847_1

ZD2GY6201


94174

ZB2BE101

Legend plates

Description	Text	Color	Reference	Weight kg/*lb*
2 direction 40 x 64 mm/ *1.57 x 2.52 in.*	Without	Black one side, red reverse	**ZD2GY5201**	0.002/0.*004*
		White one side, yellow reverse	**ZD2GY5401**	0.002/0.*004*/
	With *(1)* (specify when ordering)	Black background, white letters	**ZD2GY5002**	0.002/0.*004*
		Red background, white letters	**ZD2GY5004**	0.002/0.*004*
		White background, black letters	**ZD2GY5001**	0.002/0.*004*
		Yellow background, black letters	**ZD2GY5005**	0.002/0.*004*
4 direction 64 x 64 mm/ *2.52 x 2.52 in.*	Without	Black one side, red reverse	**ZD2GY6201**	0.003/0.*007*
		White one side, yellow reverse	**ZD2GY6401**	0.003/0.*007*
	With *(1)* (specify when ordering)	Black background, white letters	**ZD2GY6002**	0.003/0.*007*
		Red background, white letters	**ZD2GY6004**	0.003/0.*007*
		White background, black letters	**ZD2GY6001**	0.003/0.*007*
		Yellow background, black letters	**ZD2GY6005**	0.003/0.*007*

Contact block

Description	Contact	Reference	Weight kg/*lb*
Slow break Additional or replacement	N/O	**ZB2BE101**	0.015/0.*033*

(1) 2 lines of 11 characters maximum per direction.

Other versions

XD2G joystick controllers with:
- variable composition; 2, 3, 4 or 8 direction,
- contact blocks with Faston connectors conforming to NF C 20-120,
- gold flashed contacts for low power switching.

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