


## Limit, micro and foot switches K series

 **Lovato**  
**electric**  
*100% electricity*

# Safe control with



## Prewired limit switches

Metal limit switches with high degree of protection, IP67.

- 2m long wire
- Axial rotation of operating heads
- Adjustable and capsizable levers
- Fixing compatible to EN 50047
- Direct opening operation  $\ominus$

## Micro switches

Micro switches for general use, with reinforced resin housing.

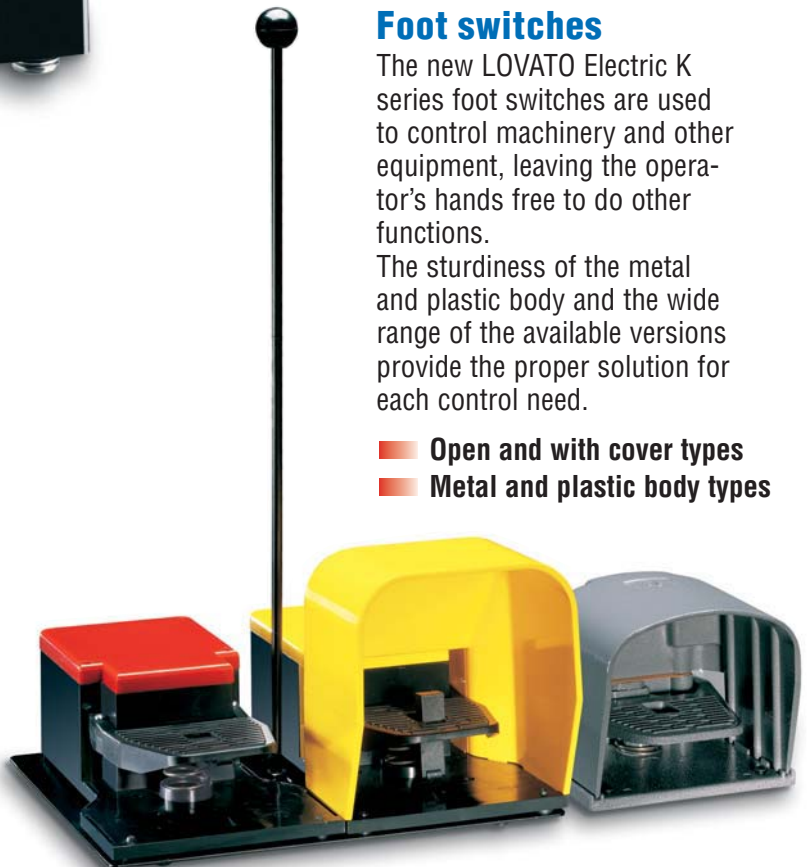
- Changeover contact switch rated 15A 250VAC
- 3 types of termination available

## Foot switches

The new LOVATO Electric K series foot switches are used to control machinery and other equipment, leaving the operator's hands free to do other functions.

The sturdiness of the metal and plastic body and the wide range of the available versions provide the proper solution for each control need.

- Open and with cover types
- Metal and plastic body types



# LOVATO Electric!

## Limit switches

It is easier and quicker to detect the position of moving parts and safely install machinery due to the new concepts represented by the Lovato Electric K series limit switches.

- Dimensions to EN 50047 standards (KB-KM types)
- Dimensions compatible to EN 50047 standards (KC-KN types)
- KB-KC plastic and KM-KN metal types
- Bayonet fixing mechanism
- Modularity of common parts
- Quick installation
- Adjustment ease
- Bi-directional types available



### All metal self-contained interchangeable heads.

The operating heads are extremely robust metal parts. Mounting both on metal or plastic bodies for all cable entry types. Separate component supply for flexible stock management.



### Maximum installation speed.

The bayonet fixing mechanism provides quick positioning of the operating head on the body with no special tools.



### 45° axial rotation of operating head.

The heads have axial rotation of 45° angles.



### 360° lever adjustment.

The rotating lever position is fully adjustable at 15° angles.



### Removable auxiliary contacts.

The switch body can contain all the types of auxiliary contacts. Combinations of two (all series) or three (for KB and KM types only) contacts are possible with snap action or slow break function.



### Maximum cabling ease.

The complete removal of the body cover and of the auxiliary contacts, supplied with open terminal screws, simplify electric cabling and reduce installation time.

# Limit switches - Bottom entry - Plastic KB type - Metal KM type

Dimensions to EN 50047



**M20 CABLE ENTRY.**  
For types with PG13.5 cable entry, add the letter P at the end of the order code.  
E.g. KB A1 S11P

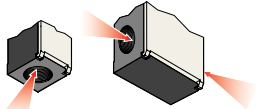


Bottom entry		Top push rod plunger	Top roller push plunger		Roller centre push lever		Roller side push lever	
Quantity per package: 5		Order code	Order code		Order code		Order code	
Contacts	Body	Metal plunger	Ø11x4mm plastic roller	Ø11x4mm metal roller	Ø11x4mm plastic roller	Ø11x4mm metal roller	Ø14x5mm plastic roller	Ø11x4mm metal roller
1NO+1NC Snap action ①	Plastic Metal	KB A1 S11 KM A1 S11	KB B1 S11 KM B1 S11	KB B2 S11 KM B2 S11	KB C1 S11 KM C1 S11	KB C2 S11 KM C2 S11	KB D1 S11 KM D1 S11	KB D2 S11 KM D2 S11
2NC Snap action ①	Plastic Metal	KB A1 S02 KM A1 S02	KB B1 S02 KM B1 S02	KB B2 S02 KM B2 S02	KB C1 S02 KM C1 S02	KB C2 S02 KM C2 S02	KB D1 S02 KM D1 S02	KB D2 S02 KM D2 S02
1NO+1NC Slow break-make before break ②	Plastic Metal	KB A1 A11 KM A1 A11	KB B1 A11 KM B1 A11	KB B2 A11 KM B2 A11	KB C1 A11 KM C1 A11	KB C2 A11 KM C2 A11	KB D1 A11 KM D1 A11	KB D2 A11 KM D2 A11
1NO+1NC Slow break ③	Plastic Metal	KB A1 L11 KM A1 L11	KB B1 L11 KM B1 L11	KB B2 L11 KM B2 L11	KB C1 L11 KM C1 L11	KB C2 L11 KM C2 L11	KB D1 L11 KM D1 L11	KB D2 L11 KM D2 L11
2NC Slow break ④	Plastic Metal	KB A1 L02 KM A1 L02	KB B1 L02 KM B1 L02	KB B2 L02 KM B2 L02	KB C1 L02 KM C1 L02	KB C2 L02 KM C2 L02	KB D1 L02 KM D1 L02	KB D2 L02 KM D2 L02
2NO Slow break ④	Plastic Metal	KB A1 L20 KM A1 L20	KB B1 L20 KM B1 L20	KB B2 L20 KM B2 L20	KB C1 L20 KM C1 L20	KB C2 L20 KM C2 L20	KB D1 L20 KM D1 L20	KB D2 L20 KM D2 L20
1NO+2NC Slow break ④	Plastic Metal	KB A1 L12 KM A1 L12	KB B1 L12 KM B1 L12	KB B2 L12 KM B2 L12	KB C1 L12 KM C1 L12	KB C2 L12 KM C2 L12	KB D1 L12 KM D1 L12	KB D2 L12 KM D2 L12
2NO+1NC Slow break ④	Plastic Metal	KB A1 L21 KM A1 L21	KB B1 L21 KM B1 L21	KB B2 L21 KM B2 L21	KB C1 L21 KM C1 L21	KB C2 L21 KM C2 L21	KB D1 L21 KM D1 L21	KB D2 L21 KM D2 L21
3NC Slow break ④	Plastic Metal	KB A1 L03 KM A1 L03	KB B1 L03 KM B1 L03	KB B2 L03 KM B2 L03	KB C1 L03 KM C1 L03	KB C2 L03 KM C2 L03	KB D1 L03 KM D1 L03	KB D2 L03 KM D2 L03
2NC Independent BI-DIRECTIONAL ⑤	Plastic Metal	—	—	—	—	—	—	—

① Direct opening operation ⊖; safety function according to IEC/EN 60947-5-1. ② Ø19x5mm. ③ Ø50x10mm. ④ Ø50x10mm, offset alignment. ⑤

# Safety switches - Bottom and side entry - Plastic and metal types

Dimensions to EN 50047 standards (KB and KM)  
Dimensions compatible to EN 50047 (KC and KN)



**M20 CABLE ENTRY.**  
For types with PG13.5 cable entry, add the letter P at the end of the order code.  
E.g. KB P1 L11P (bottom entry)  
KC P1 L11P (side entry)



Bottom and side entry		Hinge operating bottom entry			Slotted lever bottom entry	Hinge operating side entry			Slotted lever bottom entry
Quantity per package: 5		Order code			Order code	Order code			Order code
Contacts	Body	Short cylinder	Long solid shaft	Long solid shaft with reduction	Slotted lever	Short cylinder	Long solid shaft	Long solid shaft with reduction	Slotted lever
1NO+1NC Slow break ①	Plastic Metal	KB P1 L11 KM P1 L11	KB P2 L11 KM P2 L11	KB P3 L11 KM P3 L11	KB Q1 L11 KM Q1 L11	KC P1 L11 KN P1 L11	KC P2 L11 KN P2 L11	KC P3 L11 KN P3 L11	KC Q1 L11 KN Q1 L11
2NC Slow break ①	Plastic Metal	KB P1 L02 KM P1 L02	KB P2 L02 KM P2 L02	KB P3 L02 KM P3 L02	KB Q1 L02 KM Q1 L02	KC P1 L02 KN P1 L02	KC P2 L02 KN P2 L02	KC P3 L02 KN P3 L02	KC Q1 L02 KN Q1 L02
1NO+2NC Slow break ①	Plastic Metal	KB P1 L12 KM P1 L12	KB P2 L12 KM P2 L12	KB P3 L12 KM P3 L12	KB Q1 L12 KM Q1 L12				
2NO+1NC Slow break ①	Plastic Metal	KB P1 L21 KM P1 L21	KB P2 L21 KM P2 L21	KB P3 L21 KM P3 L21	KB Q1 L21 KM Q1 L21				
3NC Slow break ①	Plastic Metal	KB P1 L03 KM P1 L03	KB P2 L03 KM P2 L03	KB P3 L03 KM P3 L03	KB Q1 L03 KM Q1 L03				

① Direct opening operation ⊖; safety function according to IEC/EN 60947-5-1.

# Prewired metal limit switches - KP type

IP67 protection degree, 2m cable (both switch and cable cULus)  
Dimensions compatible to EN 50047



Bottom entry		Top push rod plunger		Top roller push plunger			
Quantity per package: 1		Order code		Order code			
Wire Ø: 2m (5x0.75mm <sup>2</sup> /5xAWG18)							
Contacts		Metal plunger	M12 fixing head, metal plunger	Plastic roller	Metal roller	90° plastic roller	90° metal roller
1NO+1NC Snap action ①		KP A1 S11	KP A2 S11	KP B1 S11	KP B2 S11	KP B3 S11	KP B4 S11
1NO+1NC Slow break ②		KP A1 L11	KP A2 L11	KP B1 L11	KP B2 L11	KP B3 L11	KP B4 L11

① Direct opening operation ⊖; safety function according to IEC/EN 60947-5-1. ② Cable: 5 cores, each 0.75mm<sup>2</sup>/5xAWG18. For prewired switches with 1m long wire only, add suffix 010 at the end of the order code; supplied on specific request only.



Roller lever plunger



Adjustable roller lever



Ceramic rod lever

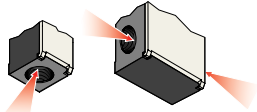


Adjustable rod lever



Omnidirectional wobble stick

Roller lever plunger			Adjustable roller lever				Ceramic rod lever	Adjustable rod lever		Omnidirectional wobble stick	
Order code			Order code				Order code	Order code		Order code	
Plastic roller ②	Metal roller ②	Rubber roller ③	Plastic roller ②	Metal roller ②	Rubber roller ③	Rubber roller ④	Ceramic rod	Plastic rod	Metal rod	Flexible rod	Semi-rigid rod
KB E1 S11 KM E1 S11	KB E2 S11 KM E2 S11	KB E3 S11 KM E3 S11	KB F1 S11 KM F1 S11	KB F2 S11 KM F2 S11	KB F3 S11 KM F3 S11	KB F4 S11 KM F4 S11	KB H1 S11 KM H1 S11	KB L1 S11 KM L1 S11	KB L2 S11 KM L2 S11	KB M1 S11 KM M1 S11	KB M2 S11 KM M2 S11
KB E1 S02 KM E1 S02	KB E2 S02 KM E2 S02	KB E3 S02 KM E3 S02	KB F1 S02 KM F1 S02	KB F2 S02 KM F2 S02	KB F3 S02 KM F3 S02	KB F4 S02 KM F4 S02	KB H1 S02 KM H1 S02	KB L1 S02 KM L1 S02	KB L2 S02 KM L2 S02	KB M1 S02 KM M1 S02	KB M2 S02 KM M2 S02
KB E1 A11 KM E1 A11	KB E2 A11 KM E2 A11	KB E3 A11 KM E3 A11	KB F1 A11 KM F1 A11	KB F2 A11 KM F2 A11	KB F3 A11 KM F3 A11	KB F4 A11 KM F4 A11	KB H1 A11 KM H1 A11	KB L1 A11 KM L1 A11	KB L2 A11 KM L2 A11	KB M1 A11 KM M1 A11	KB M2 A11 KM M2 A11
KB E1 L11 KM E1 L11	KB E2 L11 KM E2 L11	KB E3 L11 KM E3 L11	KB F1 L11 KM F1 L11	KB F2 L11 KM F2 L11	KB F3 L11 KM F3 L11	KB F4 L11 KM F4 L11	KB H1 L11 KM H1 L11	KB L1 L11 KM L1 L11	KB L2 L11 KM L2 L11	KB M1 L11 KM M1 L11	KB M2 L11 KM M2 L11
KB E1 L02 KM E1 L02	KB E2 L02 KM E2 L02	KB E3 L02 KM E3 L02	KB F1 L02 KM F1 L02	KB F2 L02 KM F2 L02	KB F3 L02 KM F3 L02	KB F4 L02 KM F4 L02	KB H1 L02 KM H1 L02	KB L1 L02 KM L1 L02	KB L2 L02 KM L2 L02	KB M1 L02 KM M1 L02	KB M2 L02 KM M2 L02
KB E1 L20 KM E1 L20	KB E2 L20 KM E2 L20	KB E3 L20 KM E3 L20	KB F1 L20 KM F1 L20	KB F2 L20 KM F2 L20	KB F3 L20 KM F3 L20	KB F4 L20 KM F4 L20	KB H1 L20 KM H1 L20	KB L1 L20 KM L1 L20	KB L2 L20 KM L2 L20	KB M1 L20 KM M1 L20	KB M2 L20 KM M2 L20
KB E1 L12 KM E1 L12	KB E2 L12 KM E2 L12	KB E3 L12 KM E3 L12	KB F1 L12 KM F1 L12	KB F2 L12 KM F2 L12	KB F3 L12 KM F3 L12	KB F4 L12 KM F4 L12	KB H1 L12 KM H1 L12	KB L1 L12 KM L1 L12	KB L2 L12 KM L2 L12	KB M1 L12 KM M1 L12	KB M2 L12 KM M2 L12
KB E1 L21 KM E1 L21	KB E2 L21 KM E2 L21	KB E3 L21 KM E3 L21	KB F1 L21 KM F1 L21	KB F2 L21 KM F2 L21	KB F3 L21 KM F3 L21	KB F4 L21 KM F4 L21	KB H1 L21 KM H1 L21	KB L1 L21 KM L1 L21	KB L2 L21 KM L2 L21	KB M1 L21 KM M1 L21	KB M2 L21 KM M2 L21
KB E1 L03 KM E1 L03	KB E2 L03 KM E2 L03	KB E3 L03 KM E3 L03	KB F1 L03 KM F1 L03	KB F2 L03 KM F2 L03	KB F3 L03 KM F3 L03	KB F4 L03 KM F4 L03	KB H1 L03 KM H1 L03	KB L1 L03 KM L1 L03	KB L2 L03 KM L2 L03	KB M1 L03 KM M1 L03	KB M2 L03 KM M2 L03
KB E1 D02 KM E1 D02	—	—	KB F1 D02 KM F1 D02	—	—	—	—	KB L1 D02 KM L1 D02	KB L2 D02 KM L2 D02	—	—



**M20 CABLE ENTRY.**  
For types with PG13.5 cable entry, add the letter **P** at the end of the order code.  
E.g. **KB N1 L11P** (bottom entry)  
**KC N1 L11P** (side entry)



Key operated

**Bottom and side entry**

Quantity per package: 5 Plastic body only		Order code			
Contacts	Entry	Straight key ②	Angled key ②	Straight "T" key ②	Angled "T" key ②
1NO+1NC Slow break ①	Bottom Side	KB N1 L11 KC N1 L11	KB N2 L11 KC N2 L11	KB N3 L11 KC N3 L11	KB N4 L11 KC N4 L11
2NC Slow break ①	Bottom Side	KB N1 L02 KC N1 L02	KB N2 L02 KC N2 L02	KB N3 L02 KC N3 L02	KB N4 L02 KC N4 L02
1NO+2NC Slow break ①	Bottom	KB N1 L12	KB N2 L12	KB N3 L12	KB N4 L12
2NO+1NC Slow break ①	Bottom	KB N1 L21	KB N2 L21	KB N3 L21	KB N4 L21
3NC Slow break ①	Bottom	KB N1 L03	KB N2 L03	KB N3 L03	KB N4 L03

① Direct opening operation (⊖); safety function according to IEC/EN 60947-5-1. ② The key is standard supplied.

**Accessories and spare parts**

**Extra keys**

Quantity per package: 5		Order code	
Description	Order code	Description	Order code
Straight key	KX N1	Angled key	KX N2
Angled key	KX N2	Straight "T" key	KX N3
Straight "T" key	KX N3	Angled "T" key	KX N4
Angled "T" key	KX N4	Toggle key	KX N5
Toggle key	KX N5		



M12 head top roller push plunger



Roller lever plunger



Adjustable roller lever



Adjustable rod lever

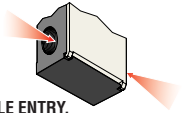


Omnidirectional wobble stick

M12 head top roller push plunger		Roller lever plunger		Adjustable roller lever	Adjustable rod lever	Omnidirectional wobble stick
Order code		Order code		Order code	Order code	Order code
Plastic roller	Metal roller	90° plastic roller	90° metal roller	Ø14x4.5mm plastic roller	Ø14x4.5mm metal roller	Ø18x5.5mm plastic roller
KP B5 S11 KP B5 L11	KP B6 S11 KP B6 L11	KP B7 S11 KP B7 L11	KP B8 S11 KP B8 L11	KP E1 S11 KP E1 L11	KP E2 S11 KP E2 L11	KP F1 S11 KP F1 L11
						KP L2 S11 KP L2 L11
						KP M2 S11 —

# Limit switches - Side entry - Plastic KC type - Metal KN type

Dimensions compatible to EN 50047



**M20 CABLE ENTRY.**  
For types with PG13.5 cable entry, add the letter **P** at the end of the order code.  
E.g. **KC A1 S11P**



Side entry		Top push rod plunger	Top roller push plunger		Roller centre push lever		Roller side push lever	
Quantity per package: 5		Order code	Order code		Order code		Order code	
Contacts	Body	Metal plunger	Ø11x4mm plastic roller	Ø11x4mm metal roller	Ø11x4mm plastic roller	Ø11x4mm metal roller	Ø14x5mm plastic roller	Ø11x4mm metal roller
1NO+1NC Snap action ①	Plastic Metal	KC A1 S11 KN A1 S11	KC B1 S11 KN B1 S11	KC B2 S11 KN B2 S11	KC C1 S11 KN C1 S11	KC C2 S11 KN C2 S11	KC D1 S11 KN D1 S11	KC D2 S11 KN D2 S11
2NC Snap action ①	Plastic Metal	KC A1 S02 KN A1 S02	KC B1 S02 KN B1 S02	KC B2 S02 KN B2 S02	KC C1 S02 KN C1 S02	KC C2 S02 KN C2 S02	KC D1 S02 KN D1 S02	KC D2 S02 KN D2 S02
1NO+1NC Slow break-make before break ①	Plastic Metal	KC A1 A11 KN A1 A11	KC B1 A11 KN B1 A11	KC B2 A11 KN B2 A11	KC C1 A11 KN C1 A11	KC C2 A11 KN C2 A11	KC D1 A11 KN D1 A11	KC D2 A11 KN D2 A11
1NO+1NC Slow break ①	Plastic Metal	KC A1 L11 KN A1 L11	KC B1 L11 KN B1 L11	KC B2 L11 KN B2 L11	KC C1 L11 KN C1 L11	KC C2 L11 KN C2 L11	KC D1 L11 KN D1 L11	KC D2 L11 KN D2 L11
2NC Slow break ①	Plastic Metal	KC A1 L02 KN A1 L02	KC B1 L02 KN B1 L02	KC B2 L02 KN B2 L02	KC C1 L02 KN C1 L02	KC C2 L02 KN C2 L02	KC D1 L02 KN D1 L02	KC D2 L02 KN D2 L02
2NO Slow break ①	Plastic Metal	KC A1 L20 KN A1 L20	KC B1 L20 KN B1 L20	KC B2 L20 KN B2 L20	KC C1 L20 KN C1 L20	KC C2 L20 KN C2 L20	KC D1 L20 KN D1 L20	KC D2 L20 KN D2 L20
2NC Independent BI-DIRECTIONAL ①	Plastic Metal	—	—	—	—	—	—	—

① Direct opening operation (⊖); safety function according to IEC/EN 60947-5-1. ② Ø19x5mm. ③ Ø50x10mm. ④ Ø50x10mm, offset alignment.

## Safe control with

### Bottom and side entry

Quantity per package: 5		Order code	
Contacts	Body	Bottom entry	Side entry
1NO+1NC Snap action ①	Plastic Metal	KX CB S11 KX CM S11	KX CC S11 KX CN S11
2NC Snap action ①	Plastic Metal	KX CB S02 KX CM S02	KX CC S02 KX CN S02
1NO+1NC Slow break-make before break ①	Plastic Metal	KX CB A11 KX CM A11	KX CC A11 KX CN A11
1NO+1NC Slow break ①	Plastic Metal	KX CB L11 KX CM L11	KX CC L11 KX CN L11
2NC Slow break ①	Plastic Metal	KX CB L02 KX CM L02	KX CC L02 KX CN L02
2NO Slow break ①	Plastic Metal	KX CB L20 KX CM L20	KX CC L20 KX CN L20
1NO+2NC Slow break ①	Plastic Metal	KX CB L12 KX CM L12	—
2NO+1NC Slow break ①	Plastic Metal	KX CB L21 KX CM L21	—
3NC Slow break ①	Plastic Metal	KX CB L03 KX CM L03	—



### Auxiliary contact blocks

Quantity per package: 5		Order code
Contacts		
1NO+1NC Snap action ① ②		KX B S11
2NC Snap action ① ②		KX B S02
1NO+1NC Slow break, make before break ① ②		KX B A11
1NO+1NC Slow break ①		KX B L11
2NC Slow break ①		KX B L02
2NO Slow break		KX B L20
1NO+2NC Slow break ① ③		KX B L12
2NO+1NC Slow break ① ③		KX B L21
3NC Slow break ① ③		KX B L03

Only for KB and KM types

### Accessories

Quantity per package: 50		Order code
Description		
M20 cable gland		KX P01
PG13.5 cable gland		KX P02
M20 rubber grommet		KX P03

### Operating heads

Quantity per package: 5		Order code
Description		
Top push rod plunger		KX A A1
Plastic top roller push plunger		KX A B1
Metal top roller push plunger		KX A B2
Plastic roller centre push lever		KX A C1
Metal roller centre push lever		KX A C2
Plastic roller side push lever		KX A D1
Metal roller side push lever		KX A D2
Plastic roller lever plunger		KX A E1
Metal roller lever plunger		KX A E2
Rubber Ø50x10mm roller lever plunger		KX A E3
Adjustable plastic roller lever Ø19x5mm		KX A F1
Adjustable metal roller lever Ø19x5mm		KX A F2
Adjustable rubber Ø50x10mm roller lever		KX A F3
Adj. offset rubber Ø50x10mm roller lever		KX A F4
Ceramic rod lever		KX A H1
Adjustable plastic rod lever		KX A L1
Adjustable metal rod lever		KX A L2
Flexible wobble stick		KX A M1
Semirigid wobble stick		KX A M2



① Direct opening operation (⊖); safety function according to IEC/EN 60947-5-1. ② Not suitable for key operated KBN / KCN, hinge operating KBP / KMP / KCP / KNP and slotted lever KBQ / KMQ / KCQ / KNQ types. ③ Only for KB and KM types.

## Micro switches - Plastic KS type

### Bottom entry

Quantity per package: 10 Plastic body only		Top push rod - Metal plunger				Push button	Top roller push plunger	
Contacts	Terminals	Order code				Order code	Order code	
		Pin	High rod plunger	Low rod plunger	M12 fixing head	Hand operation	M12 fixing head	M12 fixing head, 90° roller
Changeover contact switch; NO, NC, COMMON	Solder	KS A1 S	KS A2 S	KS A3 S	KS A4 S	KS A9 S	KS B1 S	KS B2 S
	Screw	KS A1 V	KS A2 V	KS A3 V	KS A4 V	KS A9 V	KS B1 V	KS B2 V
	Faston	KS A1 F	KS A2 F	KS A3 F	KS A4 F	KS A9 F	KS B1 F	KS B2 F





Order code			Order code				Order code	Order code		Order code	
Plastic roller ②	Metal roller ②	Rubber roller ③	Plastic roller ②	Metal roller ②	Rubber roller ③	Rubber roller ④	Ceramic rod	Plastic rod	Metal rod	Flexible rod	Semi-rigid rod
KC E1 S11 KN E1 S11	KC E2 S11 KN E2 S11	KC E3 S11 KN E3 S11	KC F1 S11 KN F1 S11	KC F2 S11 KN F2 S11	KC F3 S11 KN F3 S11	KC F4 S11 KN F4 S11	KC H1 S11 KN H1 S11	KC L1 S11 KN L1 S11	KC L2 S11 KN L2 S11	KC M1 S11 KN M1 S11	KC M2 S11 KN M2 S11
KC E1 S02 KN E1 S02	KC E2 S02 KN E2 S02	KC E3 S02 KN E3 S02	KC F1 S02 KN F1 S02	KC F2 S02 KN F2 S02	KC F3 S02 KN F3 S02	KC F4 S02 KN F4 S02	KC H1 S02 KN H1 S02	KC L1 S02 KN L1 S02	KC L2 S02 KN L2 S02	KC M1 S02 KN M1 S02	KC M2 S02 KN M2 S02
KC E1 A11 KN E1 A11	KC E2 A11 KN E2 A11	KC E3 A11 KN E3 A11	KC F1 A11 KN F1 A11	KC F2 A11 KN F2 A11	KC F3 A11 KN F3 A11	KC F4 A11 KN F4 A11	KC H1 A11 KN H1 A11	KC L1 A11 KN L1 A11	KC L2 A11 KN L2 A11	KC M1 A11 KN M1 A11	KC M2 A11 KN M2 A11
KC E1 L11 KN E1 L11	KC E2 L11 KN E2 L11	KC E3 L11 KN E3 L11	KC F1 L11 KN F1 L11	KC F2 L11 KN F2 L11	KC F3 L11 KN F3 L11	KC F4 L11 KN F4 L11	KC H1 L11 KN H1 L11	KC L1 L11 KN L1 L11	KC L2 L11 KN L2 L11	KC M1 L11 KN M1 L11	KC M2 L11 KN M2 L11
KC E1 L02 KN E1 L02	KC E2 L02 KN E2 L02	KC E3 L02 KN E3 L02	KC F1 L02 KN F1 L02	KC F2 L02 KN F2 L02	KC F3 L02 KN F3 L02	KC F4 L02 KN F4 L02	KC H1 L02 KN H1 L02	KC L1 L02 KN L1 L02	KC L2 L02 KN L2 L02	KC M1 L02 KN M1 L02	KC M2 L02 KN M2 L02
KC E1 L20 KN E1 L20	KC E2 L20 KN E2 L20	KC E3 L20 KN E3 L20	KC F1 L20 KN F1 L20	KC F2 L20 KN F2 L20	KC F3 L20 KN F3 L20	KC F4 L20 KN F4 L20	KC H1 L20 KN H1 L20	KC L1 L20 KN L1 L20	KC L2 L20 KN L2 L20	KC M1 L20 KN M1 L20	KC M2 L20 KN M2 L20
KC E1 D02 KN E1 D02	—	—	—	—	—	—	—	—	—	—	—

# LOVATO Electric!

## Technical characteristics

### KB, KC, KM and KN types

#### OPERATIONAL CHARACTERISTICS

- Maximum operating rate: 3600 cycles/h
- Mechanical life: >10 million cycles
- Operating temperature: -25...+70°C
- Storage temperature: -40...+70°C
- Pollution degree: 3 (suitable for dirty ambient).

#### Contacts:

- Conventional thermal current Ith: 10A
- IEC/EN 60947-5-1 designation:
  - A600 Q600 for KB and KC types
  - A300 Q300 for KM and KN types
- Rated insulation voltage Ui:
  - 690VAC for KB and KC types
  - 440VAC for KM and KN types
- Rated impulse withstand voltage Uimp:
  - 6kV for KB and KC types
  - 4kV for KM and KN types
- Contact resistance: <10mK.

#### Body housing:

- Degree of protection: IP65
- KB and KC types: self-extinguishing double insulation polymer thermoplastic
- KM and KN types: aluminium-zinc alloy (zama)
- Body fixing tightening torque: 2.5 Nm
- Cable entry:
  - M20 standard supply; PG 13.5 available (add the letter P at the end of the order code).

#### CERTIFICATIONS AND COMPLIANCE

Certifications obtained: cULus, GOST.  
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, EN 81-1.

### KP type

#### OPERATIONAL CHARACTERISTICS

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.01-1m/s
- Mechanical life: >10 million cycles
- Operating temperature: -25...+70°C
- Storage temperature: -40...+70°C
- Pollution degree: 3 (suitable for dirty ambient).

#### Contacts:

- Conventional thermal current Ith: 5A
- IEC/EN 60947-5-1 designation: B300 R300
- Rated insulation voltage Ui: 400VAC
- Rated impulse withstand voltage Uimp: 4kV
- Contact resistance: <28mK.

#### Body housing:

- Class I insulation
- Degree of protection: IP67
- Aluminium-zinc alloy (zama).

#### CERTIFICATIONS AND COMPLIANCE

Certifications obtained: cULus.  
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1.

### KS type

#### OPERATIONAL CHARACTERISTICS

- Maximum operating rate: 240 cycles/min
- Switching time: 0.01-1m/s
- Mechanical life: 20 million cycles
- Operating temperature: -25...+70°C
- Storage temperature: -40...+70°C

#### Contacts:

- Conventional thermal current Ith: 15A
- IEC/EN 60947-5-1 designation: A600-P300
- Rating: AC15 240VAC 6,3A
- Rated insulation voltage Ui: 250VAC
- Contact resistance: <15mK.

#### Heads:

- Operators of aluminium-zinc alloy (zama).

#### Body housing:

- Polymer thermoplastic.
- Degree of protection terminals: IP00 or IP20 with terminal shroud

#### CERTIFICATIONS AND COMPLIANCE

Certifications obtained: cULus.  
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1.



Roller centre push lever

Flat lever

Accessories

Order code

Order code

Order code

26.6mm, long lever	48.5mm, long lever	38mm, long lever	One-way roller lever	63mm, long lever	54mm, long lever	168.3mm, long lever
KS C1 S	KS C2 S	KS C3 S	KS C9 S	KS L1 S	KS L2 S	KS L3 S
KS C1 V	KS C2 V	KS C3 V	KS C9 V	KS L1 V	KS L2 V	KS L3 V
KS C1 F	KS C2 F	KS C3 F	KS C9 F	KS L1 F	KS L2 F	KS L3 F

Terminal shroud	Terminal shroud with grommet
KSS C01	KSS CB2

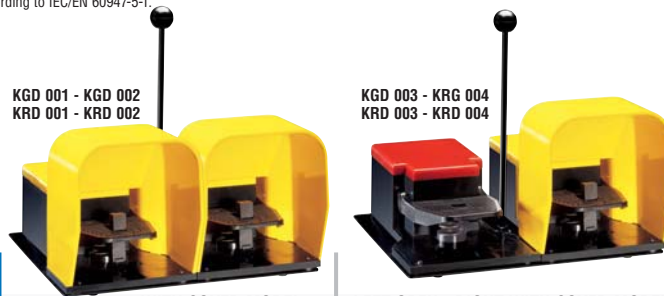
# Foot switches - Plastic KG type - Metal KR type



## One pedal foot switches

Quantity per package: 1		OPEN MODEL			WITH COVER MODEL			
		Order code						
Contacts	Body	With free actuation	With safety lever	With pedal actuator lock	With free actuation	With safety lever	With pedal actuator lock	With two-stage safety lever
1NO+1NC Snap action	Plastic Metal	KG1 00 S11 KR1 00 S11	KG1 10 S11 KR1 10 S11	KG1 20 S11 KR1 20 S11	KG2 00 S11 KR2 00 S11	KG2 10 S11 KR2 10 S11	KG2 20 S11 KR2 20 S11	
1NO+1NC Slow break	Plastic Metal	KG1 00 L11 KR1 00 L11	KG1 10 L11 KR1 10 L11	KG1 20 L11 KR1 20 L11	KG2 00 L11 KR2 00 L11	KG2 10 L11 KR2 10 L11	KG2 20 L11 KR2 20 L11	
2NO+2NC Snap action	Plastic Metal					KG2 10 S22 KR2 10 S22		
2NO+2NC 2-stage snap action	Plastic Metal							KG2 11 S22 KR2 11 S22

Direct operating operation safety function according to IEC/EN 60947-5-1.

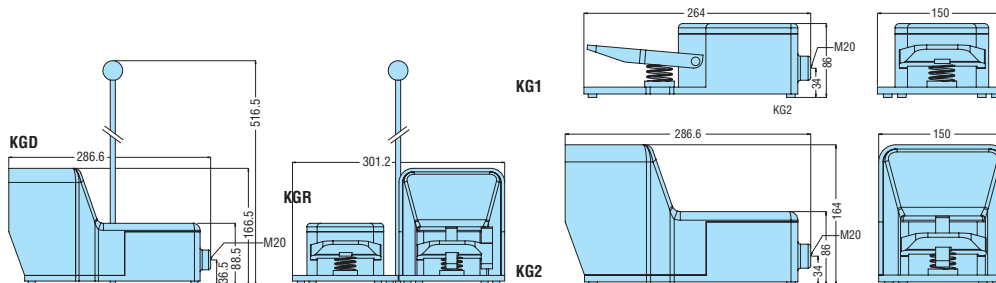


## Two pedal foot switches

Quantity per package: 1		WITH COVER MODEL	LEFT OPEN - RIGHT WITH COVER MODEL
		Order code	
Contacts	Body	With safety lever on both pedals	Left pedal with free actuation and right pedal with safety lever
1NO+1NC Snap action	Plastic Metal	KGD 001 KRD 001	KGD 003 KRD 003
2NO+2NC Snap action	Plastic Metal	KGD 002 KRD 002	
1NO+1NC Snap action  (left) 2NO+2NC Snap action  (right)	Plastic Metal		KGD 004 KRD 004

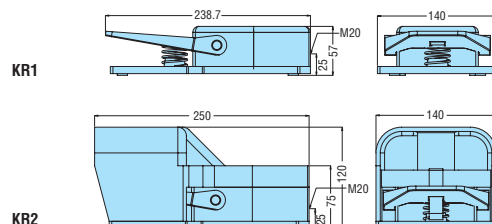
Direct opening operation safety function according to IEC/EN 60947-5-1.

## Foot switches - Dimensions [mm]



## Accessories

Quantity per package: 50		KX P...
Description	Order code	
M20 cable gland	KX P01	
PG13.5 cable gland	KX P02	
M20 rubber grommet	KX P03	



## Technical characteristics

### GENERAL CHARACTERISTICS

- Thermoplastic or metal version are available. The plastic or metal body gives adequate robustness to the foot switch, for installation in all ambient and application conditions.
- Versions complete with or without pedal protection cover. The cover assures protection against accidental foot switch operation, due to sudden tool or heavy material dropping or other shock or vibration.
- Versions with safety lever. The safety mechanism prevents unintentional foot switch activation and excludes the pedal to be pressed if the operator's foot is not completely in place.
- Stable pedal base. The foot switch is equipped with rubber feet and metal-reinforced base for a firm and non-sliding position and a more reliable and safe activation.

### OPERATIONAL CHARACTERISTICS

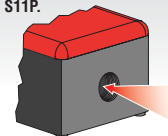
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A

- IEC/EN 60947-5-1 designation:
  - A600 Q600 for KG types
  - A300 Q300 for KR types
- Rated insulation voltage Ui:
  - 690VAC for KG types
  - 440VAC for KR types
- Rated impulse withstand voltage Uimp:
  - 6kV for KG types
  - 4kV for KR types
- Class II insulation (KG types only)
- Contact resistance: <10mΩ
- Degree of protection:
  - IP20 for terminals
  - IP54 for body housing
  - IP65 available on request (add the letter S at the end of the order code. E.g. KG1 00 S11S)
- Housing:
  - KG types: self-extinguishing double insulation polymer thermoplastic
  - KR types: aluminium-zinc alloy
- Operating temperature: -25...+70°C
- Storage temperature: -40...+70°C

- Cable entry: M20 standard supplied; PG13.5 available. See the note below for details.

### M20 CABLE ENTRY.

For types with PG13.5 cable entry, add the letter P at the end of the order code. E.g. KG1 00 S11P.

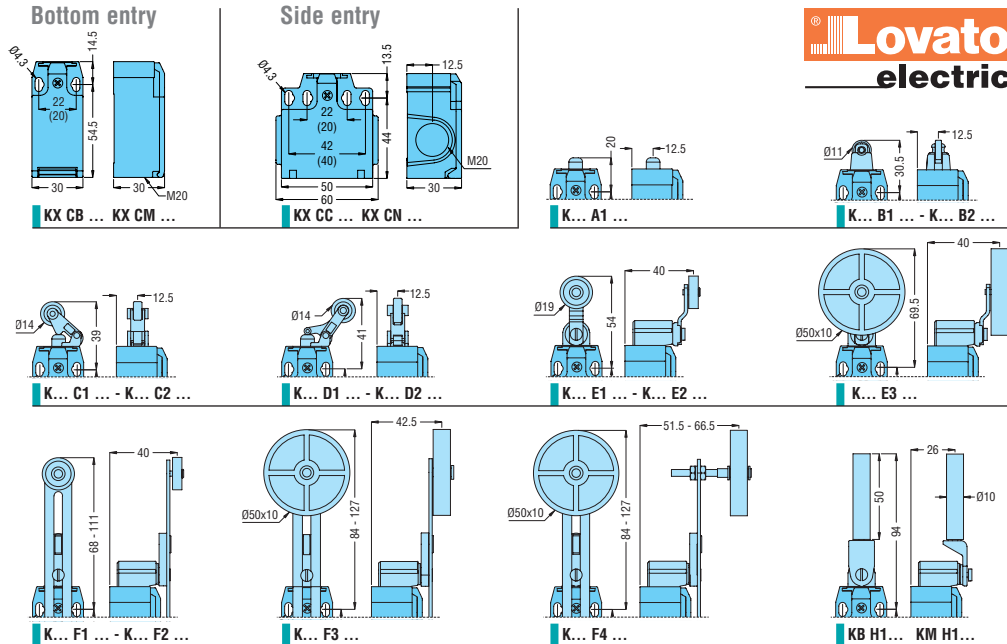


### CERTIFICATIONS AND COMPLIANCE

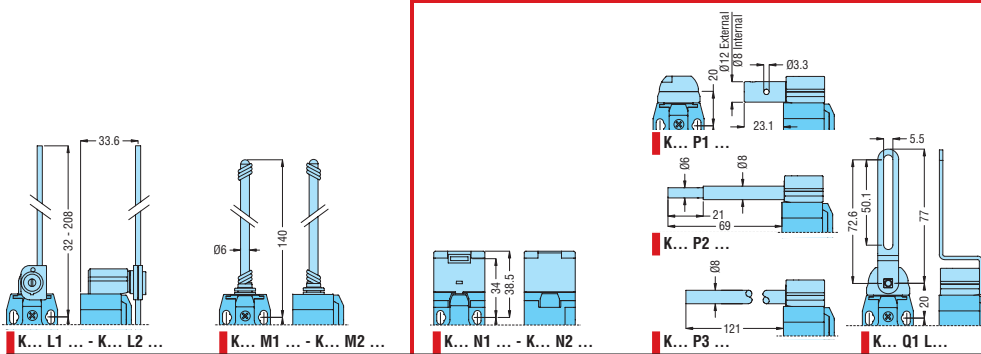
Certifications obtained:  
 us (contacts only).  
 Compliant with standards:  
 IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, EN292, EN 60447.



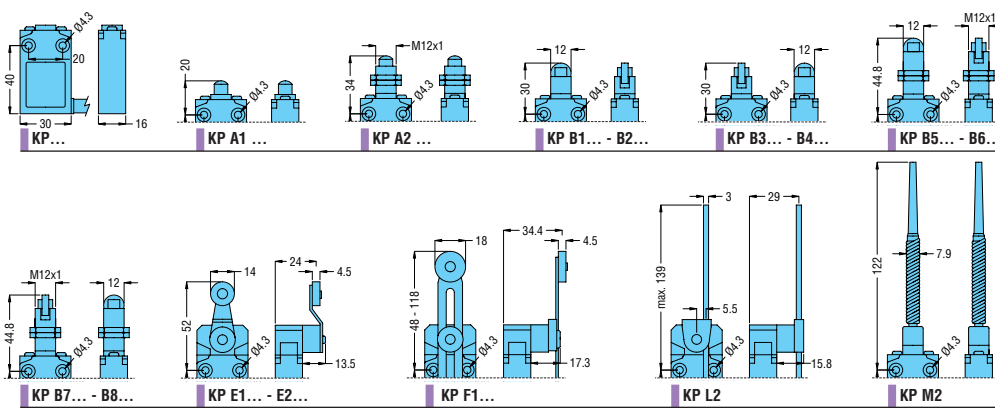
# Limit switches - Dimensions [mm]



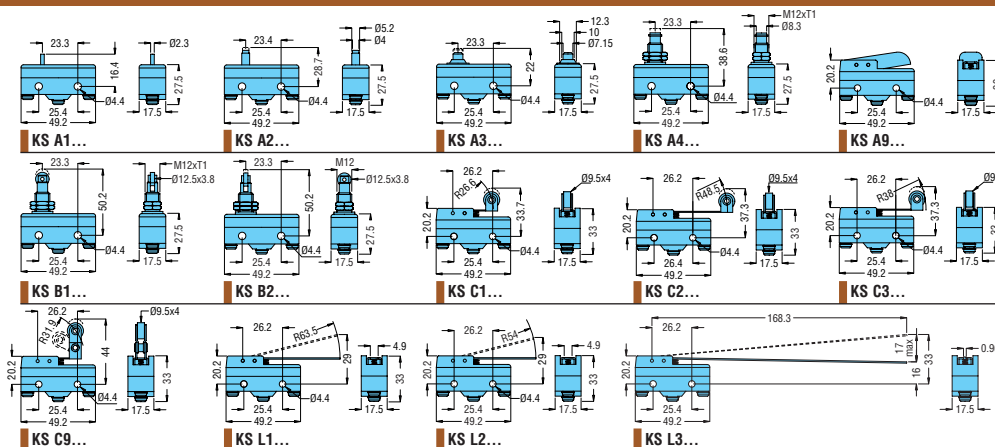
# Limit switches - Dimensions [mm]



# Prewired metal limit switches - Dimensions [mm]



# Micro switches - Dimensions [mm]



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Switch disconnectors from 16 to 1250A



Contactors



Signal towers and beacons LT7 and LB6 types



Digital metering multimeter DMG series







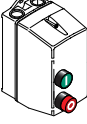



Automatic transfer switch controller ATL 10 type







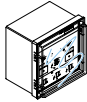
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








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-  Switch disconnectors
-  Contactors
-  Motor protection relays
-  Electromechanical starters
-  Control and signalling units
-  Limit, micro and foot switches
-  Rotary cam switches

**PLANET Din**

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-  Time relays
-  Protection relays
-  Level control relays
-  Earth leakage relays

**PLANET Logic**

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-  Soft starters
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-  Automatic power factor controllers
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-  Automatic transfer switch controllers
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