

- Limit Switches p7-1
- Prewired Metal Limit Switches p7-16
- Pull Wire Switches p7-17
- Micro Switches p7-20
- Foot Switches p7-21
- Rotary Limit Switches p7-27
- Pendant Switches p7-29
- Radio Controls p7-30
- Inductive Sensors p7-32
- Capacitive Sensors p7-36
- Photoelectric Sensors p7-37
- Rotary Encoders p7-42



MJ Seies

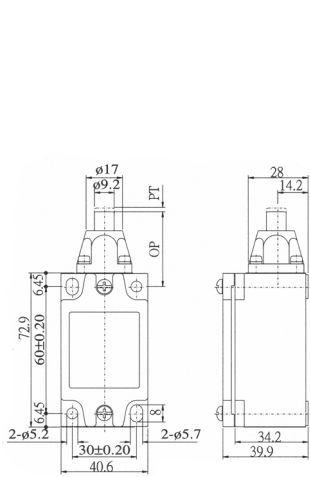
- Actuator head can be rotated in 4 positions
- Heavy Duty cast aluminium housing
- Steel actuator heads



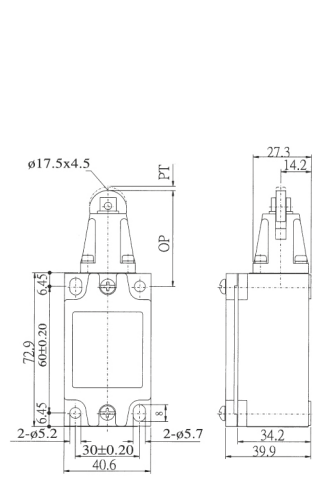
Operational characteristics

Contacts: 1NO + 1NC
Contact rating: AC12 - 10A 250V/125Vac
 AC15- 5A 250V
 DC15- 0.4A @ 115/24Vdc
Max. Operating Voltage: 300Vac
Mechanical Life: 15 x 10⁶ operations
Electrical Life: 5 x 10⁵ operations
Max. Operations/min: 120
Operating Temp: - 10 to + 80°C
Protection: IP 67
Cable Entry: ½" NPT

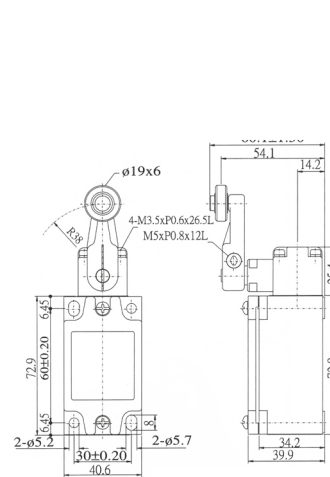
Order Code	Type	Operator Type	Operator Force	Weight (Kg)
ONTWLDG110	MJ7101	Push Plunger	2800g	0.290
ONTWLDRG115	MJ7102	Roller Plunger	2800g	0.290
ONTWLCA130	MJ7104	Side Rotating Roller	1400g	0.300
ONTWLCA155	MJ7108	Side Adjustable Rotating Roller	1400g	0.315
ONTWLCA150	MJ7107	Adjustable Lever with Rod	150g	0.300
ONTWLNUG125	MJ7106	Flexible Steel Rod	150g	0.310
ONTWLCA540	MJ3241	Side Flip-Flop Rotating Roller	1200g	0.315



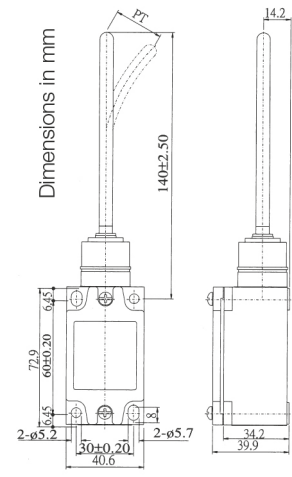
MJ7101



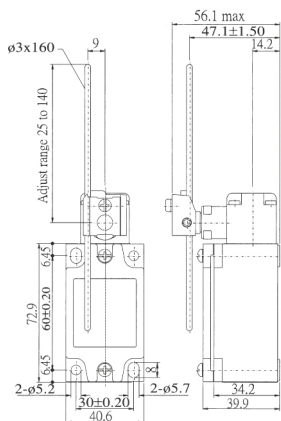
MJ7102



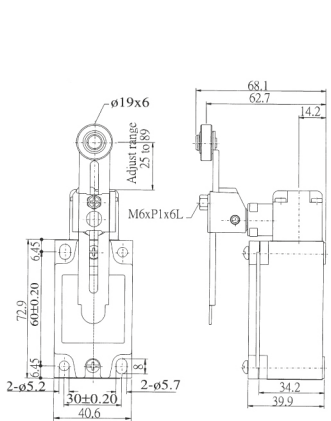
MJ7104



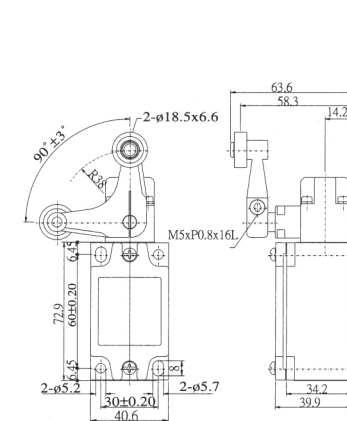
MJ7106



MJ7107



MJ7108



MJ3241

SWITCHES AND SENSORS

Limit switches, K series. One bottom cable entry. Dimensions to EN 50047
Two side cable entries. Dimensions compatible to EN 50047



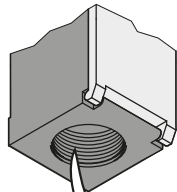
Top push rod plunger



KB A... - KM A...



KC A... - KN A...



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

Order code	Plastic body	Metal body	Contacts	Plunger material	Qty per pkg	Wt
					n°	[kg]
One bottom cable entry. Dimensions to EN 50047.						
KB A1 S11		KM A1 S11	1NO+1NC Snap action ①	Metal	5	②
Two side cable entries. Dimensions compatible to EN 50047.						
KC A1 S11		KN A1 S11	1NO+1NC Snap action ①	Metal	5	②

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

② Contact our customer service 1800 252 995 or sales@mechtronic.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

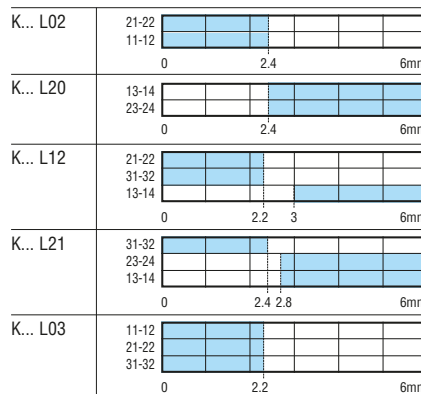
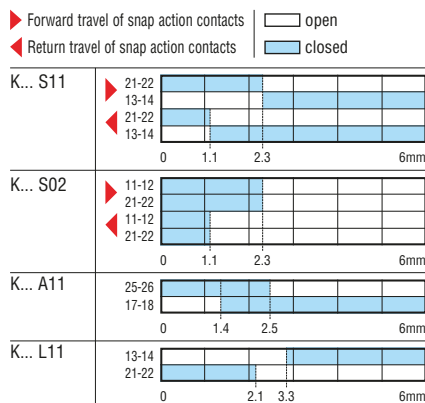
Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

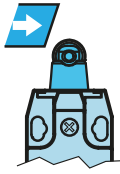
For dimensions see page 7-22.



Top roller push plunger



KB B... - KM B...



KC B... - KN B...

Order code	Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt [kg]
				Ø11x4	n°	[kg]
One bottom cable entry. Dimensions to EN 50047.						
KB B1 S11	KM B1 S11		1NO+1NC	Plastic	5	⊕
KB B2 S11	KM B2 S11		Snap action ^①	Metal	5	⊕
Two side cable entries. Dimensions compatible to EN 50047.						
KC B1 S11	KN B1 S11		1NO+1NC	Plastic	5	⊕
KC B2 S11	KN B2 S11		Snap action ^①	Metal	5	⊕

① Direct opening operation \ominus ; safety function according to IEC/EN 60947-5-1.
⊕ Contact our customer service 1800 252 995 or sales@mechtric.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

Operational characteristics

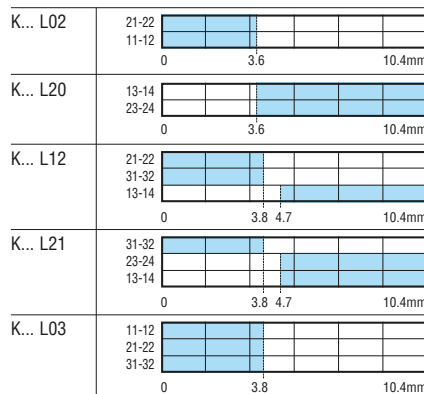
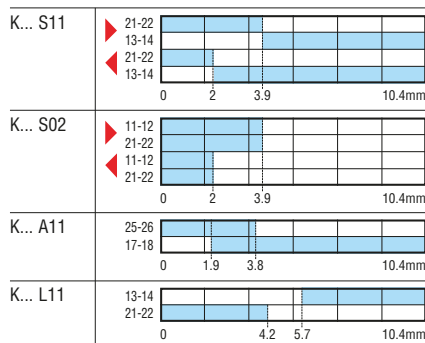
- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5ms
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-22.

▶ Forward travel of snap action contacts open
◀ Return travel of snap action contacts closed



SWITCHES AND SENSORS

Limit switches, K series. One bottom cable entry. Dimensions to EN 50047
Two side cable entries. Dimensions compatible to EN 50047



Roller centre push lever



KB C... - KM C...



KC C... - KN C...

Order code	Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt [kg]
One bottom cable entry. Dimensions to EN 50047.				Ø14x5	n°	
KB C1 S11	KM C1 S11		1NO+1NC	Plastic	5	⊕
KB C2 S11	KM C2 S11		Snap action ^①	Metal	5	⊕
Two side cable entries. Dimensions compatible to EN 50047.						
KC C1 S11	KN C1 S11		1NO+1NC	Plastic	5	⊕
KC C2 S11	KN C2 S11		Snap action ^①	Metal	5	⊕

① Direct opening operation ⊖; safety function according to IEC/EN 60947-5-1.
⊕ Contact our customer service 1800 252 995 or sales@mechtronic.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

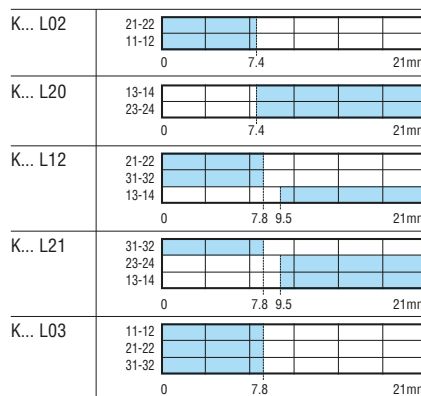
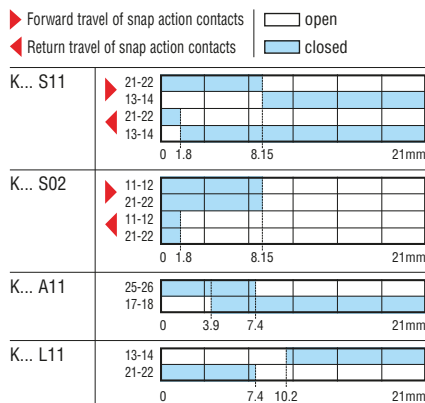
Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

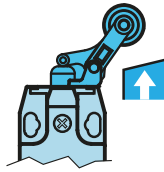
For dimensions see page 7-22.



Roller side push lever



KB D... - KM D...



KC D... - KN D...

Order code	Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt [kg]
One bottom cable entry. Dimensions to EN 50047.						
KB D1 S11	KM D1 S11		1NO+1NC	Plastic	5	⊕
KB D2 S11	KM D2 S11		Snap action ⊕	Metal	5	⊕
Two side cable entries. Dimensions compatible to EN 50047.						
KC D1 S11	KN D1 S11		1NO+1NC	Plastic	5	⊕
KC D2 S11	KN D2 S11		Snap action ⊕	Metal	5	⊕

⊕ Direct opening operation ⊖; safety function according to IEC/EN 60947-5-1.
⊕ Contact our customer service 1800 252 995 or sales@mechtronic.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

Operational characteristics

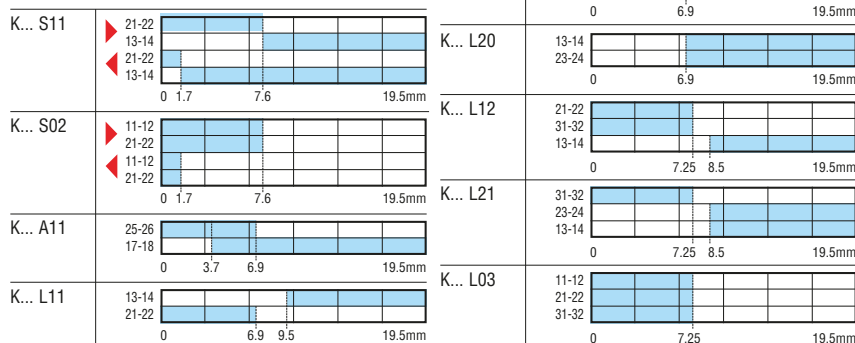
- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5ms
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-22.

▶ Forward travel of snap action contacts (white)
◀ Return travel of snap action contacts (blue)



SWITCHES AND SENSORS

Limit switches, K series

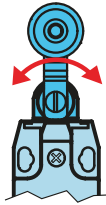
One bottom cable entry. Dimensions to EN 50047



Roller lever plunger



KB E1... - KB E2...
KM E1... - KM E2...



KB E3... - KM E3...

Order code	Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
					n°	[kg]
One bottom cable entry. Dimensions to EN 50047.						
KB E1 S11	KM E1 S11	1NO+1NC	Snap action Ⓢ	Plastic ①	5	④
KB E2 S11	KM E2 S11			Metal ①	5	④
KB E3 S11	KM E3 S11			Rubber ②	5	④
BI-DIRECTIONAL. One bottom cable entry. Dimensions to EN 50047.						
KB E1 D02	KM E1 D02	2NC Ⓢ	independent	Plastic ①	5	⑤

- ① Ø19x5mm.
- ② Ø50x10mm.
- ③ Direct opening operation ; safety function according to IEC/EN 60947-5-1.
- ④ Contact our customer service 1800 252 995 or sales@mechtronic.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

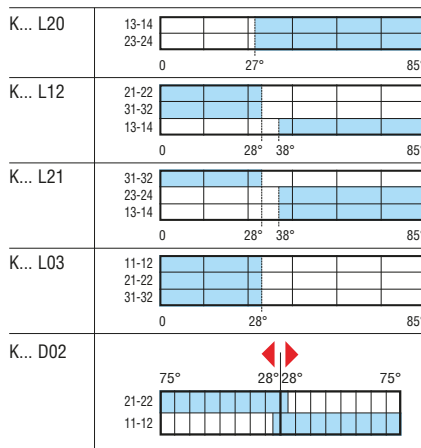
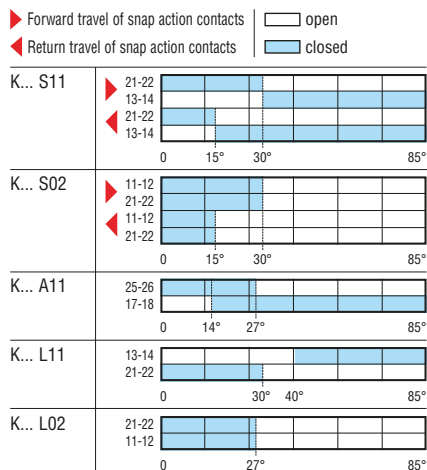
Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

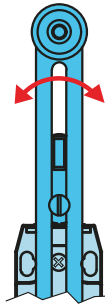
Certifications and compliance

Certifications obtained: cULus, GOST.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

For dimensions see page 7-22.



Adjustable Roller lever



Order code	Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt [kg]
One bottom cable entry. Dimensions to EN 50047.						
KB F1 S11	KB F1 S11		1NO+1NC	Plastic ①	5	⑤
KB F2 S11	KB F2 S11		Snap action ④	Metal ①	5	⑤
KB F3 S11	KB F3 S11			Rubber ②	5	⑤
KB F4 S11	KB F4 S11			Rubber ③	5	⑤

BI-DIRECTIONAL.
One bottom cable entry. Dimensions to EN 50047.

Order code	Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt [kg]
KB F1 D02	KB F1 D02		2NC ④ independent	Plastic ①	5	⑤

- ① Ø19x5mm.
- ② Ø50x10mm.
- ③ Ø50x10mm with offset alignment.
- ④ Direct opening operation ; safety function according to IEC/EN 60947-5-1.
- ⑤ Contact our customer service 1800 252 995 or sales@mechtric.com.au

KB F... - KM F...

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

Operational characteristics

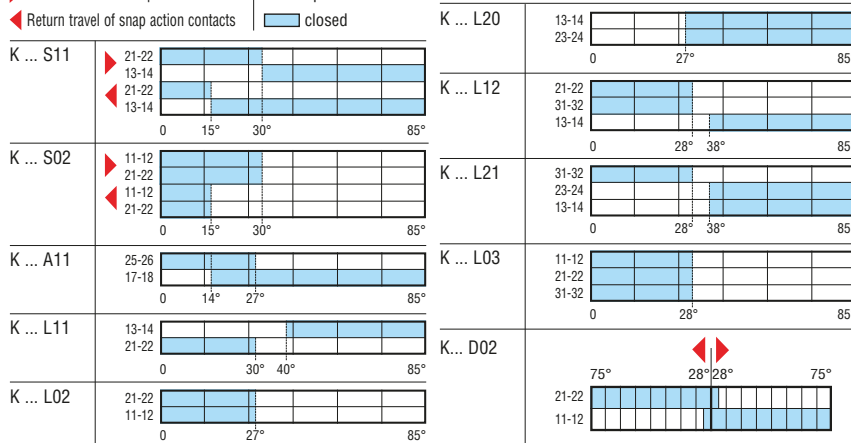
- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5ms
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-22.

▶ Forward travel of snap action contacts open
◀ Return travel of snap action contacts closed



SWITCHES AND SENSORS

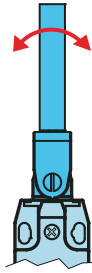
Limit switches, K series. One bottom cable entry. Dimensions to EN 50047
Two side cable entries. Dimensions compatible to EN 50047



Ceramic rod lever



KB H... - KM H...



KC H... - KN H...

Order code	Plastic body	Metal body	Contacts	Rod material	Qty per pkg	Wt
					n°	[kg]
One bottom cable entry. Dimensions to EN 50047.						
KB H1 S11	KM H1 S11		1NO+1NC Snap action ①	Ceramic	5	②
KB H1 S02	KM H1 S02		2NC Snap action ①	Ceramic	5	②
Two side cable entries. Dimensions compatible to EN 50047.						
KC H1 S11	KN H1 S11		1NO+1NC Snap action ①	Ceramic	5	②

① Direct opening operation ; safety function according to IEC/EN 60947-5-1.
② Contact our customer service 1800 252 995 or sales@mechtronic.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

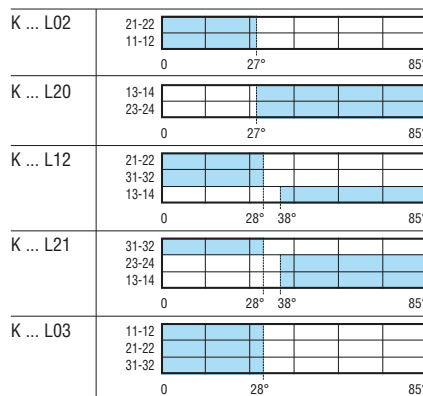
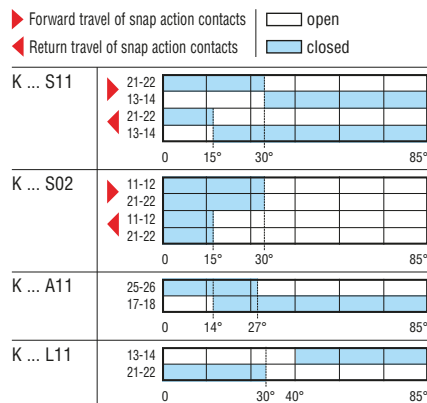
Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

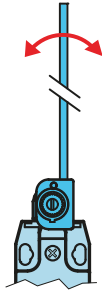
For dimensions see page 7-22.



Adjustable rod lever



KB L... - KM L...



KC L... - KN L...

Order code	Plastic body	Metal body	Contacts	Rod material	Qty per pkg	Wt [kg]
One bottom cable entry. Dimensions to EN 50047.						
KB L1 S11	KB L1 S11		1NO+1NC	Plastic	5	②
KB L2 S11	KB L2 S11		Snap action ①	Metal	5	②
Two side cable entries. Dimensions compatible to EN 50047.						
KC L1 S11	KN L1 S11		1NO+1NC	Plastic	5	②
KC L2 S11	KN L2 S11		Snap action ①	Metal	5	②
BI-DIRECTIONAL.						
One bottom cable entry. Dimensions to EN 50047.						
KB L1 D02	KB L1 D02		2NC ①	Plastic ①	5	②
			Independent			
KB L2 D02	KB L2 D02		2NC ①	Metal ①	5	②
			Independent			

① Direct opening operation ; safety function according to IEC/EN 60947-5-1.
② Contact our customer service 1800 252 995 or sales@mechtric.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

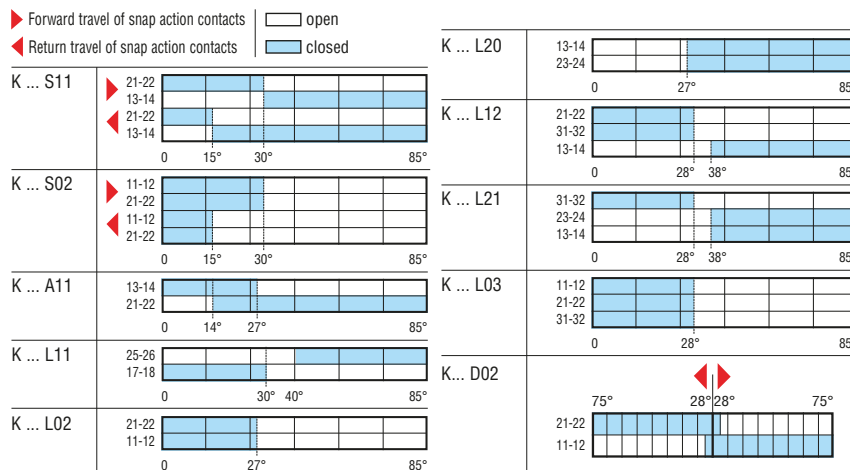
Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-23.



SWITCHES AND SENSORS

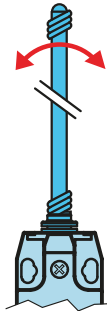
Limit switches, K series. One bottom cable entry. Dimensions to EN 50047
Two side cable entries. Dimensions compatible to EN 50047



Wobble stick, omnidirectional



KB M1... - KM M1...



KC M2... - KN M2...

Order code	Plastic body	Metal body	Contacts	Rod material	Qty per pkg	Wt [kg]
One bottom cable entry. Dimensions to EN 50047.						
KB M1 S11	KM M1 S11		1NO+1NC	Flexible	5	①
KB M2 S11	KM M2 S11		Snap action	Semirigid	5	①
Two side cable entries. Dimensions compatible to EN 50047.						
KC M1 S11	KN M1 S11		1NO+1NC	Flexible	5	①
KC M2 S11	KN M2 S11		Snap action	Semirigid	5	①

① Contact our customer service 1800 252 995 or sales@mechtronic.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-23.

- ▶ Forward travel of snap action contacts
- ◀ Return travel of snap action contacts



K... S11		K... L02	
K... S02		K... L20	
K... A11		K... L12	
K... L11		K... L21	
		K... L03	

Hinge operating



KB P... - KM P...



KC P... - KN P...

Order code Plastic body	Metal body	Contacts	Shaft features	Qty per pkg n°	Wt [kg]
One bottom cable entry. Dimensions to EN 50047.					
KB P1 L11	KM P1 L11	1NO+1NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KB P2 L11	KM P2 L11	1NO+1NC Slow break Ⓢ	Long solid	5	Ⓢ
KB P3 L11	KM P3 L11	1NO+1NC Slow break Ⓢ	Long solid w/ reduction	5	Ⓢ
KB P1 L02	KM P1 L02	2NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KB P2 L02	KM P2 L02	2NC Slow break Ⓢ	Long solid	5	Ⓢ
KB P3 L02	KM P3 L02	2NC Slow break Ⓢ	Long solid w/ reduction	5	Ⓢ
KB P1 L12	KM P1 L12	1NO+2NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KB P2 L12	KM P2 L12	1NO+2NC Slow break Ⓢ	Long solid	5	Ⓢ
KB P3 L12	KM P3 L12	1NO+2NC Slow break Ⓢ	Long solid w/ reduction	5	Ⓢ
KB P1 L21	KM P1 L21	2NO+1NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KB P2 L21	KM P2 L21	2NO+1NC Slow break Ⓢ	Long solid	5	Ⓢ
KB P3 L21	KM P3 L21	2NO+1NC Slow break Ⓢ	Long solid w/ reduction	5	Ⓢ
KB P1 L03	KM P1 L03	3NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KB P2 L03	KM P2 L03	3NC Slow break Ⓢ	Long solid	5	Ⓢ
KB P3 L03	KM P3 L03	3NC Slow break Ⓢ	Long solid w/ reduction	5	Ⓢ
Two side cable entries. Dimensions compatible to EN 50047.					
KC P1 L11	KN P1 L11	1NO+1NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KC P1 L02	KN P1 L02	2NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KC P1 L12	KN P1 L12	1NO+2NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KC P1 L21	KN P1 L21	2NO+1NC Slow break Ⓢ	Short cylinder	5	Ⓢ
KC P1 L03	KN P1 L03	3NC Slow break Ⓢ	Short cylinder	5	Ⓢ

Ⓢ Direct opening operation Ⓢ safety function according to IEC/EN 60947-5-1.
Ⓢ Contact our customer service 1800 252 995 or sales@mechtric.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

Operational characteristics

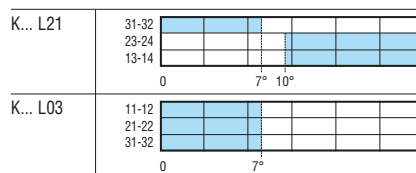
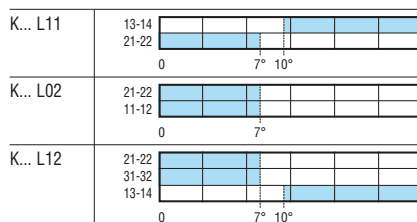
- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-23.

□ open
■ closed

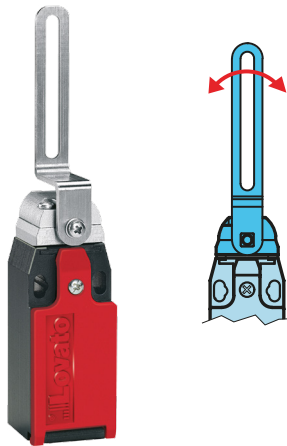


SWITCHES AND SENSORS

Limit switches, K series. One bottom cable entry. Dimensions to EN 50047
Two side cable entries. Dimensions compatible to EN 50047



Slotted lever



KB Q... - KM Q...



KC Q... - KN Q...

Order code Plastic body	Metal body	Contacts	Qty per pkg	Wt [kg]
One bottom cable entry. Dimensions to EN 50047.				
KB Q1 L11	KM Q1 L11	1NO+1NC Slow break	5	②
KB Q1 L02	KM Q1 L02	2NC Slow break	5	②
KB Q1 L12	KM Q1 L12	1NO+2NC Slow break	5	②
KB Q1 L21	KM Q1 L21	2NO+1NC Slow break	5	②
KB Q1 L03	KM Q1 L03	3NC Slow break	5	②
Two side cable entries. Dimensions compatible to EN 50047.				
KC Q1 L11	KN Q1 L11	1NO+1NC Slow break	5	②
KC Q1 L02	KN Q1 L02	2NC Slow break	5	②

① Direct opening operation \ominus ; safety function according to IEC/EN 60947-5-1.
② Contact our customer service 1800 252 995 or sales@mechtronic.com.au

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability. The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles. The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

Operational characteristics

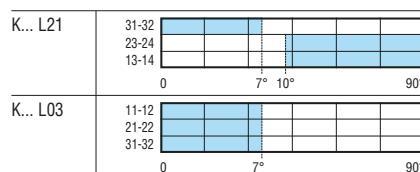
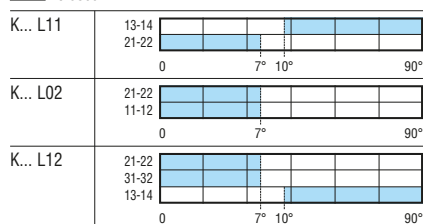
- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-23.

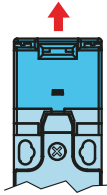
□ open
■ closed



Key operated

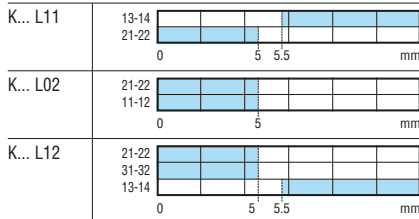


KB N...



KC N...

□ open
■ closed



Order code Plastic body	Contacts	Key shape ^②	Qty per pkg	Wt
			n°	[kg]

One bottom cable entry. Dimensions to EN 50047.

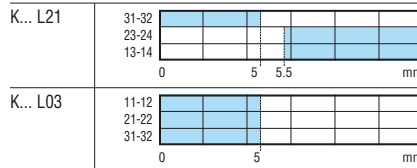
KB N1 L11	1NO+1NC	Straight	5	0.092
KB N2 L11	Slow break ^①	Angled	5	0.092
KB N3 L11		Straight "T"	5	0.092
KB N4 L11		Angled "T"	5	0.092
KB N1 L02	2NC	Straight	5	0.092
KB N2 L02	Slow break ^①	Angled	5	0.092
KB N3 L02		Straight "T"	5	0.092
KB N4 L02		Angled "T"	5	0.092
KB N1 L12	1NO+2NC	Straight	5	0.096
KB N2 L12	Slow break ^①	Angled	5	0.096
KB N3 L12		Straight "T"	5	0.096
KB N4 L12		Angled "T"	5	0.096
KB N1 L21	2NO+1NC	Straight	5	0.096
KB N2 L21	Slow break ^①	Angled	5	0.096
KB N3 L21		Straight "T"	5	0.096
KB N4 L21		Angled "T"	5	0.096
KB N1 L03	3NC	Straight	5	0.096
KB N2 L03	Slow break ^①	Angled	5	0.096
KB N3 L03		Straight "T"	5	0.096
KB N4 L03		Angled "T"	5	0.096

Two side cable entries. Dimensions compatible to EN 50047.

KC N1 L11	1NO+1NC	Straight	5	0.107
KC N2 L11	Slow break ^①	Angled	5	0.107
KC N3 L11		Straight "T"	5	0.107
KC N4 L11		Angled "T"	5	0.107
KC N1 L02	2NC	Straight	5	0.107
KC N2 L02	Slow break ^①	Angled	5	0.107
KC N3 L02		Straight "T"	5	0.107
KC N4 L02		Angled "T"	5	0.107

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

② The key is standard supplied.



Accessories and spare parts for key operated switches



KX N1



KX N2



KX N3



KX N4



KX N5

Order code	Description	Qty per pkg	Wt
		n°	[kg]
K X N1	Straight key	5	0.012
K X N2	Angled key	5	0.012
K X N3	Straight "T" key	5	0.012
K X N4	Angled "T" key	5	0.012
K X N5	Toggle key	5	0.019

General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, wiring ease, simple setup, modularity, sturdiness and constant reliability.

The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism consents to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles.

The auxiliary contact blocks are removable assuring remarkable wiring simplicity.

Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching time: 0.5-1.5m/s
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KB-KC types
 - A300 Q300 for KM-KN types
- Rated insulation voltage Ui:
 - 690VAC for KB-KC types
 - 440VAC for KM-KN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KB-KC types
 - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing
- Operators of aluminium-zinc alloy
- Housing:
 - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
 - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

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, UL508, CSA C22.2 n° 14.

For dimensions see page 7-23.

SWITCHES AND SENSORS

Limit switches, K series. Accessories and spare parts for KB - KC - KM and KN type limit switches



Auxiliary contact blocks



K X B...

Order code	Contacts	Qty per pkg	Wt
		n°	[kg]
KX B S11	1NO+1NC Snap action①②	10	0.024
KX B S02	2NC Snap action①②	10	0.024
KX B A11	1NO+1NC Slow break, make before break①②	10	0.024
KX B L11	1NO+1NC Slow break②	10	0.024
KX B L02	2NC Slow break②	10	0.024
KX B L20	2NO Slow break	10	0.024
KX B L12	1NO+2NC Slow break②③	10	0.024
KX B L21	2NO+1NC Slow break②③	10	0.024
KX B L03	3NC Slow break②③	10	0.024

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

Body complete with auxiliary contacts



KX CB... - KX CM...



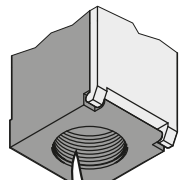
KX CC... - KX CN...

Order code	Plastic body	Metal body	Contacts	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KX CB S11	KX CM S11		1NO+1NC Snap action①②	10	④
KX CB S02	KX CM S02		2NC Snap action①②	10	④
KX CB A11	KX CM A11		1NO+1NC Slow break, make before break①②	10	④
KX CB L11	KX CM L11		1NO+1NC Slow break②	10	④
KX CB L02	KX CM L02		2NC Slow break②	10	④
KX CB L20	KX CM L20		2NO Slow break	10	④
KX CB L12	KX CM L12		1NO+2NC Slow break②③	10	④
KX CB L21	KX CM L21		2NO+1NC Slow break②③	10	④
KX CB L03	KX CM L03		3NC Slow break②③	10	④

Two side cable entries. Dimensions compatible to EN 50047.

KX CC S11	KX CN S11	1NO+1NC Snap action①②	10	④
KX CC S02	KX CN S02	2NC Snap action①②	10	④
KX CC A11	KX CN A11	1NO+1NC Slow break, make before break①②	10	④
KX CC L11	KX CN L11	1NO+1NC Slow break②	10	④
KX CC L02	KX CN L02	2NC Slow break②	10	④
KX CC L20	KX CN L20	2NO Slow break	10	④

- ① Not suitable for key operated KBN / KCN, hinged operating KBP / KCP / KMP / KNP and slotted lever KBQ / KCQ / KMQ / KNQ types.
- ② Direct opening operation (↺); safety function according to IEC/EN 60947-5-1.
- ③ Not suitable for KC and KN types.
- ④ Contact our customer service 1800 252 995 or sales@mechtronic.com.au



M20 CABLE ENTRY

For types with PG13.5 cable entry, add the letter P at the end of the order code. E.g. KB Q1 L11P

General characteristics

The KXB contact blocks can be used with the K series of limit switches. Combinations of 2 contacts with slow-break or snap action and 3 slow-break contacts, for KB and KM types only, are available. The NC contacts have direct opening operation, a specific safety principle. The particular four-point contacts warrant high conductivity in any sort of application. The removal of the contacts from the limit switch body provides remarkable wiring ease and reduces installation time as well. The KX C... bodies, complete with auxiliary contacts, can be used as spare parts for the K series limit switches or coupled with the KX A... operating heads, to obtain complete limit switches in the required configurations. The body cover is hinged at the bottom and removable to have the best access. Each body includes the innovative locking bayonet mechanism of the operating head. Plastic and metal types are available.

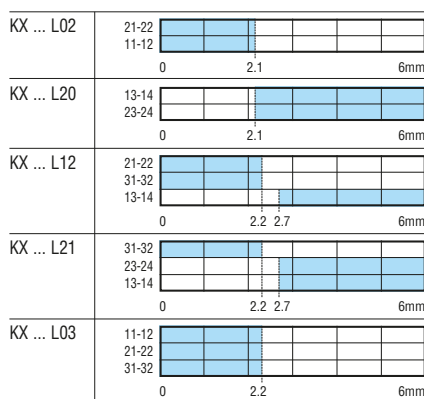
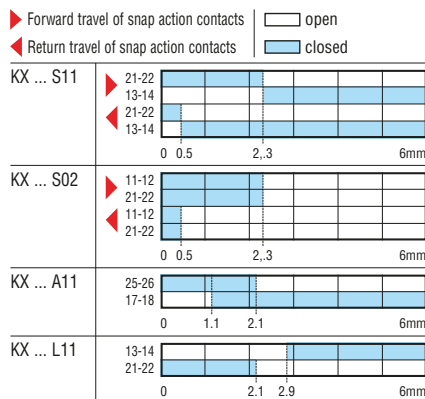
Operational characteristics

- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 10A
- Designation to IEC/EN 60947-5-1:
 - A600 Q300 for KX CB-KX CC types
 - A300 Q300 for KX CM-KX CN types
- Rated insulation voltage Ui:
 - 690VAC for KX CB-KX CC types
 - 440VAC for KX CM-KX CN types
- Rated impulse withstand voltage Uimp:
 - 6kV for KX CB-KX CC types
 - 4kV for KX CM-KX CN types
- Class II insulation for KX CB-KX CC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Cable connection: Self-releasing screw terminal
- Degree of protection:
 - IP20 for terminals
 - IP65 for body housing (with operating head mounted)
- Housing:
 - KX CB-KX CC types - Self-extinguishing double-insulation polymer thermoplastic
 - KX CM-KX CN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Tightening torque for body fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

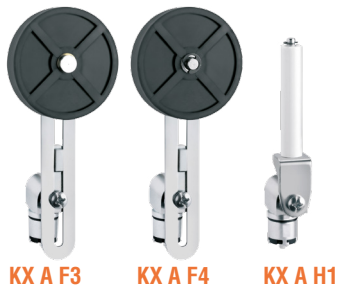
Certifications and compliance

Certifications obtained: GOST for all, cULus for KX C... body types only and cULus for auxiliary contacts only. Comply with standards: EN50047, IEC/EN 60947-1, IEC/EN60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

For dimensions see pages 7-22 and 7-23.



Operating heads



Order code	Description	Qty per pkg	Wt
		n°	[kg]
KX A A1	Top push rod plunger	5	0.010
KX A B1	Plastic top roller push plunger	5	0.015
KX A B2	Metal top roller push plunger	5	0.015
KX A C1	Plastic roller centre push lever	5	0.015
KX A C2	Metal roller centre push lever	5	0.020
KX A D1	Plastic roller side push lever	5	0.015
KX A D2	Metal roller side push lever	5	0.020
KX A E1	Plastic roller lever plunger	5	0.035
KX A E2	Metal roller lever plunger	5	0.045
KX A E3	Rubber Ø50x10mm roller lever plunger	5	0.050
KX A F1	Adjustable plastic roller lever Ø19x5mm	5	0.050
KX A F2	Adjustable metal roller lever Ø19x5mm	5	0.060
KX A F3	Adjustable rubber Ø50x10mm roller lever	5	0.065
KX A F4	Adjustable offset rubber Ø50x10mm roller lever	5	0.070
KX A H1	Ceramic rod lever	5	0.050
KX A L1	Adjustable plastic rod lever	5	0.040
KX A L2	Adjustable stainless steel rod lever	5	0.050
KX A M1	Flexible wobble stick	5	0.030
KX A M2	Semirigid wobble stick	5	0.025

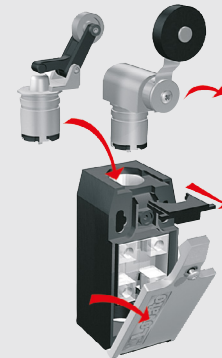
General characteristics

The KX A... operating heads can be used as spare parts for the K series limit switches or coupled with the KX C... bodies to obtain complete limit switches in the required configurations.

The heads are made of metal and warrant sturdiness and operating reliability in all conditions.

The shape of the coupling section with the body of the K series switches consents to orient the head in any 45° angle position while the initial level and rod position can be adjusted 360° at 15° angle positions.

The head fixing to the body is achieved by the innovative locking bayonet mechanism so there is no need of tooling.



For dimensions see pages 7-22 and 7-23.

Cable glands and cable conduit



Order code	Description	Qty per pkg	Wt
		n°	[kg]
KX P01	M20 cable gland	5	0.009
KX P02	PG13.5 cable gland	5	0.009
KX P03	M20 rubber cable conduit	50	0.004

General characteristics

The cable glands are in plastic with either M20 or PG13.5 thread and provide to keep the cable in place and maintain the proper IP protection of the limit switch after installation.

Operational characteristics for cable gland

- Material: Self-extinguishing polyamide
- Degree of protection: IP68
- Gland seal with cable diameter: 6-12mm.

Certifications and compliance

Certifications obtained: cULus for cable glands, GOST for all. Compliant with standards: EN 50262, UL508.

SWITCHES AND SENSORS

Limit switches, K series
Prewired metal limit switches



Prewired metal limit switches



KP A1...

KP A2...



KP B1...

KP B2...



KP B3...

KP B4...



KP B5...

KP B6...



KP B7...

KP B8...



KP E1...

KP E2...



KP F1...

KP L2...



KP M2 S11

Order code	Contacts	Cable length ⊕ m	Qty per pkg n°	Wt [kg]
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TOP PUSH ROD PLUNGER.

KP A1 S11	1NO+1NC Snap actionⓈ	2	1	0.283
KP A1 L11	1NO+1NC Slow breakⓈ	2	1	0.283
KP A2 S11Ⓢ	1NO+1NC Snap actionⓈ	2	1	0.294
KP A2 L11Ⓢ	1NO+1NC Slow breakⓈ	2	1	0.294

TOP ROLLER PUSH PLUNGER.

KP B1 S11	1NO+1NC Snap actionⓈ	2	1	0.281
KP B1 L11	1NO+1NC Slow breakⓈ	2	1	0.281
KP B2 S11	1NO+1NC Snap actionⓈ	2	1	0.283
KP B2 L11	1NO+1NC Slow breakⓈ	2	1	0.283
KP B3 S11Ⓢ	1NO+1NC Snap actionⓈ	2	1	0.281
KP B3 L11Ⓢ	1NO+1NC Slow breakⓈ	2	1	0.281
KP B4 S11Ⓢ	1NO+1NC Snap actionⓈ	2	1	0.282
KP B4 L11Ⓢ	1NO+1NC Slow breakⓈ	2	1	0.281

M12 HEAD TOP ROLLER PUSH PLUNGER.

KP B5 S11	1NO+1NC Snap actionⓈ	2	1	0.299
KP B5 L11	1NO+1NC Slow breakⓈ	2	1	0.299
KP B6 S11	1NO+1NC Snap actionⓈ	2	1	0.301
KP B6 L11	1NO+1NC Slow breakⓈ	2	1	0.301
KP B7 S11Ⓢ	1NO+1NC Snap actionⓈ	2	1	0.300
KP B7 L11Ⓢ	1NO+1NC Slow breakⓈ	2	1	0.300
KP B8 S11Ⓢ	1NO+1NC Snap actionⓈ	2	1	0.300
KP B8 L11Ⓢ	1NO+1NC Slow breakⓈ	2	1	0.300

ROLLER LEVER PLUNGER.

KP E1 S11	1NO+1NC Snap actionⓈ	2	1	0.324
KP E1 L11	1NO+1NC Slow breakⓈ	2	1	0.324
KP E2 S11	1NO+1NC Snap actionⓈ	2	1	0.324
KP E2 L11	1NO+1NC Slow breakⓈ	2	1	0.324

ADJUSTABLE ROLLER LEVER.

KP F1 S11	1NO+1NC Snap actionⓈ	2	1	0.333
KP F1 L11	1NO+1NC Slow breakⓈ	2	1	0.333

ADJUSTABLE ROD LEVER.

KP L2 S11	1NO+1NC Snap actionⓈ	2	1	0.335
KP L2 L11	1NO+1NC Slow breakⓈ	2	1	0.335

OMNIDIRECTIONAL WOBBLE STICK.

KP M2 S11	1NO+1NC Snap actionⓈ	2	1	0.289
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Ⓢ Direct opening operation ⊖; safety function according to IEC/EN 60947-5-1.

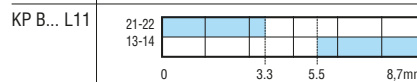
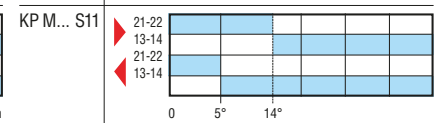
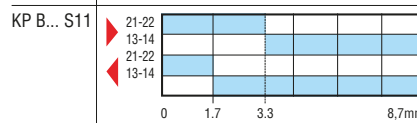
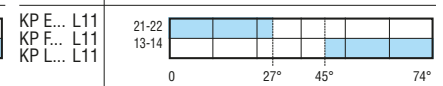
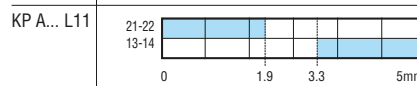
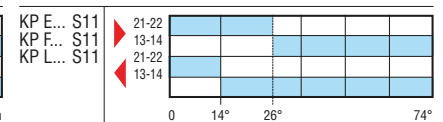
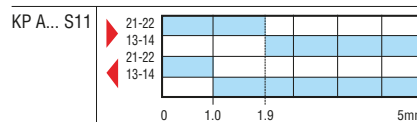
Ⓢ For prewired switches with 1m long wire only, add suffix 010 at the end of the order code.

Example: KP A1 S11 010 for prewired switch, top push metal rod plunger, with 1NO+1NC snap action contacts and 1m long wire.

Ⓢ M12 head fixing.

Ⓢ Roller operation perpendicular to switch body.

▶ Forward travel of snap action contacts | open
 ◀ Return travel of snap action contacts | closed



Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Mechanical life: >10 million cycles
- Conventional thermal current Ith: 5A
- Designation to IEC/EN 60947-5-1: B300 R300
- Rated insulation voltage Ui: 400VAC
- Rated impulse withstand voltage Uimp: 4kV
- Class I insulation
- Contact resistance: <25mΩ
- 2 metre long cable ⊕ (5 cores, each 0.75mm²/18 AWG)
- Degree of protection: IP67 for body housing
- Body housing: aluminium - zinc alloy
- Operating force:
 - KP A types: 15N
 - KP B types: 10N
 - KP E, KP F and KP L types: 0.08Nm
 - KP M types: 0.1Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40 ... +70°C
 - Suitable for ambient pollution degree: 3.

Certifications and compliance

Certifications obtained: cULus, GOST.

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA-C22.2 n° 14.

For dimensions see page 7-24.

Dimensions to EN 50047



RS1 13 10
RS2 13 10
RS3 13 10

Order code	Contacts	Ring material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
RS1 13 10	1NO+1NC Snap action	Steel	1	0.090
RS2 13 10	1NO+1NC Slow action	Steel	1	0.090
RS3 13 10	2NO Slow action	Steel	1	0.090

Type	▶ Forward travel of snap action contacts <input type="checkbox"/> open ◀ Return travel of snap action contacts <input type="checkbox"/> closed
RS1 13...	
RS2 13...	
RS3 13...	
TS1 13...	
TL1 13...	

Dimensions to EN 50041



TS1 13 - TL1 10

Order code	Contacts	Ring material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
TS1 13 10	1NO+1NC Snap action	Steel	1	0.117
TL1 13 10	1NO+1NC Slow action	Steel	1	0.117

General characteristics

The RS and T series limit switches are designed and manufactured according to European standards for dimensions and operating characteristics. The double-insulated housing of the limit switch is made of glass-reinforced self-extinguishing polyamide resin to protect internal circuits against shocks or impacts and in industrial environments, against accidental ingress of tools and accidental contact. The contacts are dimensioned to ensure self cleaning of the silver-alloy contact surfaces.

Operational characteristics

- Maximum operating rate: 3600 cycles/h for RS...13 10; 1200 cycles/h for T...13 10
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC utilisation category
 - DC13 duty: 1.5A 24V
 - AC15 duty: 6A 250V
- IEC conventional thermal current Ith: 10A
- IEC rated insulation voltage Ui: 250VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operating force: 25N/5.6lb
- Cable entry: PG11 for RS...13 10; PG13.5 for T...13 10
- Cable connection: Self-releasing screw terminal
- Tightening torque:
 - Switch fixing: 2.5Nm / 22.1lbin
 - Contact terminals: 0.8Nm / 7lbin
 - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
 - Operating temperature: -25...+70°C
 - Storage temperature: -40...+70°C
 - Pollution degree: 3
 - IEC degree of protection: IP65 for RS...13 10; IP66 for T...13 10.

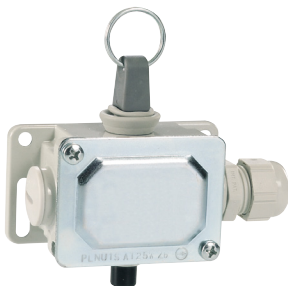
Certifications and compliance

Certifications obtained: EAC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches. Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, EN 81-1, EN 50041, UL508, CSA C22.2 n° 14.

For dimensions see page 7-24.

SWITCHES AND SENSORS

Rope-pull lever limit switches for normal stopping



PLN...AT...W

Order code	Contacts	Degree of protection	Operating force	Qty per pkg	Wt
		IEC	[N] / [lb]	n°	[kg]
Without reset button					
PLN U1 AT	1NO+1NC	IP40	10 / 2.2	1	0.240
PLN U1 AT W	①	IP65	10 / 2.2	1	0.240
PLN U1 AT25	1NO+1NC	IP40	25 / 5.6	1	0.240
PLN U1 AT25 W	①	IP65	25 / 5.6	1	0.240

① Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Type	Travel [mm (in)]	<input type="checkbox"/> open <input type="checkbox"/> closed
PLN U1 AT...		
P2L 8...		
P2L 10...		



P2L...

Order code	Contacts	Degree of protection	Operating force	Qty per pkg	Wt
		IEC	[N] / [lb]	n°	[kg]
Without reset button.					
P2L8 13 11	1NO+1NC	IP65	40 / 9	1	0.459
P2L8 13 12	①	IP65	120 / 27	1	0.459
P2L10 13 11	2NO+2NC	IP65	40 / 9	1	0.459
P2L10 13 12	①	IP65	120 / 27	1	0.459

① Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

General characteristics

The PLN and P2L types are limit switches for general use.

The simple constructive design, oversize contacts and careful material combinations warrant safe and constant operation. The metal-alloy housing and the thermoplastic mechanism material of first-rate mechanical features assure reliability and durability with any type of operating condition.

Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Mechanical life: >10 million cycles
- IEC utilisation category
 - DC13 duty: 10A 24V
 - AC15 duty: 5A 250V; 3A 400V
- IEC conventional thermal current Ith: 10A for PLN types; 6A for P2L types
- IEC rated insulation voltage Ui: 400VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Cable entry: PG11 (PLN...W and P2L types only complete with cable gland)
- Cable connection: Self-releasing screw terminal suitable for cables up to 2.5mm²/AWG 14
- Tightening torque for switch fixing: 2.5Nm/2.21 lbin
- Ambient conditions:
 - Operating temperature: -25...+70°C
 - Storage temperature: -40...+70°C
 - Pollution degree: 3
 - IEC degree of protection: IP40 / IP65 (see order code table indications).

Certifications and compliance

Certifications obtained: IMQ.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, EN 81-1.

For dimensions see page 7-24.

Rope lever for emergency stopping



RS13 13 10

TL13 13 10



PLN 13 13 11



P2L...

Accessories and spare parts



P33032

P33033



P33034



P33035

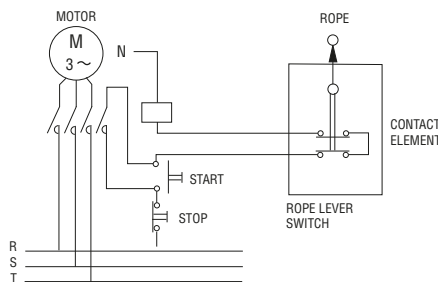


P33036

Order code	Contacts	Force	Qty per pkg	Wt
		[N]	n°	[kg]
With reset button.				
RS13 13 10	1NO + 1NC	25	1	0.092
TL13 13 10	1NO + 1NC	25	1	0.125
PLN13 13 11	1NO + 1NC	60	1	0.248
P2L13 13 11	1NO + 1NC	40	1	0.459
P2L13 13 12	1NO + 1NC	120	1	0.459
P2L15 13 11	2NO + 2NC	40	1	0.459
P2L15 13 12	2NO + 2NC	120	1	0.459

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

Example of wiring diagram



Type	open	closed
RS...	11-12	21-22
T...	0	[mm] 6
PLN...	11-12	21-22
	0	[mm] 8
P2L13...	11-12	21-22
	0	[mm] 10
P2L15...	31-32	41-42
	13-14	23-24
	0	[mm] 10

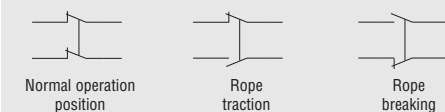
General characteristics

The rope-operated switches for emergency stop are mainly suitable for emergency stop or alarm systems for machinery which occupies a large space. This emergency stop can be achieved from any point when the rope is manually pulled each time. The choice of the body, between plastic and metal, can satisfy the most diversified requirements for sturdiness and size.

Operational characteristics

- Maximum operating rate: 1800 cycles/h
- Mechanical life: 100,000 cycles
- Utilisation category
 - DC13 duty: 1.5A 24V (10A 24V only for PLN-P2L)
 - AC15 duty: 6A 250V (3A 400V only for PLN-P2L)
- Conventional thermal current Ith: 10A for RS, TL and PLN; 6A for P2L
- Rated insulation voltage Ui: 250VAC (400V for PLN-P2L)
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG quick fuse
- Degree of protection: IP65 (T series: IP66)
- Cable entry: PG11 for RS, PLN and P2L types only (PLN and P2L complete with cable gland); PG13.5 for TL13 only
- Cable connection: Self-releasing screw terminal
- Tightening torque for switch fixing: 2.5Nm
- Ambient conditions:
 - Operating temperature: -25 ... +70°C
 - Storage temperature: -40...+70°C
 - Suitable for ambient pollution degree: 3.

Operation



Certification and compliance

Certifications obtained: cULus for RS13 and TL13 types only; GOST for all. Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, ISO 13850; also UL508, CSA-C22.2 n° 14 for RS and TL types.

For dimensions see page 7-24.

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Accessories.			
P33032	Rope terminal clamp, Ø5mm	10	0.023
P33033	Rope eye, Ø5mm	10	0.007
P33034	Turnbuckle M6x60	10	0.061
P33035	Eye bolt M8	10	0.030
P33036	Steel rope, Ø5mm	100[m]	4.900

The P33036 rope is sold in 100m roll.

SWITCHES AND SENSORS

Limit switches, K series
Plastic micro switches



Micro switches



Order code	Contacts	Terminal	Qty per pkg	Wt
			n°	[kg]
TOP PUSH ROD - METAL PLUNGER. Pin.				
KS A1 S	1NO/NC	Solder	10	0.027
KS A1 V	1NO/NC	Screw	10	0.027
KS A1 F	1NO/NC	Faston	10	0.029
TOP PUSH ROD - METAL PLUNGER. High rod plunger.				
KS A2 S	1NO/NC	Solder	10	0.029
KS A2 V	1NO/NC	Screw	10	0.029
KS A2 F	1NO/NC	Faston	10	0.031
TOP PUSH ROD - METAL PLUNGER. Low rod plunger.				
KS A3 S	1NO/NC	Solder	10	0.029
KS A3 V	1NO/NC	Screw	10	0.028
KS A3 F	1NO/NC	Faston	10	0.030
TOP PUSH ROD - METAL PLUNGER. M12 fixing head.				
KS A4 S	1NO/NC	Solder	10	0.048
KS A4 V	1NO/NC	Screw	10	0.047
KS A4 F	1NO/NC	Faston	10	0.049
PUSH BUTTON.				
KS A9 S	1NO/NC	Solder	10	0.029
KS A9 V	1NO/NC	Screw	10	0.028
KS A9 F	1NO/NC	Faston	10	0.030
TOP ROLLER PUSH PLUNGER. M12 fixing head.				
KS B1 S	1NO/NC	Solder	10	0.061
KS B1 V	1NO/NC	Screw	10	0.060
KS B1 F	1NO/NC	Faston	10	0.062
TOP ROLLER PUSH PLUNGER. M12 fixing head, 90° roller.				
KS B2 S	1NO/NC	Solder	10	0.061
KS B2 V	1NO/NC	Screw	10	0.060
KS B2 F	1NO/NC	Faston	10	0.062
ROLLER CENTRE PUSH LEVER. 26.6mm long lever.				
KS C1 S	1NO/NC	Solder	10	0.032
KS C1 V	1NO/NC	Screw	10	0.031
KS C1 F	1NO/NC	Faston	10	0.033
ROLLER CENTRE PUSH LEVER. 48.5mm long lever.				
KS C2 S	1NO/NC	Solder	10	0.032
KS C2 V	1NO/NC	Screw	10	0.031
KS C2 F	1NO/NC	Faston	10	0.033
ROLLER CENTRE PUSH LEVER. 38mm long lever.				
KS C3 S	1NO/NC	Solder	10	0.032
KS C3 V	1NO/NC	Screw	10	0.031
KS C3 F	1NO/NC	Faston	10	0.033
ROLLER CENTRE PUSH LEVER. One-way roller lever.				
KS C9 S	1NO/NC	Solder	10	0.034
KS C9 V	1NO/NC	Screw	10	0.033
KS C9 F	1NO/NC	Faston	10	0.035
METAL LEVER. 63mm long flat lever.				
KS L1 S	1NO/NC	Solder	10	0.032
KS L1 V	1NO/NC	Screw	10	0.031
KS L1 F	1NO/NC	Faston	10	0.033
METAL LEVER. 54mm long flat lever.				
KS L2 S	1NO/NC	Solder	10	0.032
KS L2 V	1NO/NC	Screw	10	0.031
KS L2 F	1NO/NC	Faston	10	0.033
METAL LEVER. 168.3mm long flat cylindrical lever.				
KS L3 S	1NO/NC	Solder	10	0.032
KS L3 V	1NO/NC	Screw	10	0.031
KS L3 F	1NO/NC	Faston	10	0.033
ACCESSORIES				
KSS C01	Terminal shroud		10	0.006
KSS CB2	Terminal shroud with conduit		10	0.014

Operational characteristics

- Maximum operating rate: 240 cycles/min
- Switching time: 0.01-1ms
- Mechanical life: 20 million cycles
- Conventional thermal current Ith: 15A
- Designation to IEC/EN 60947-5-1: A600 P300
- Rating: AC15 240VAC 6.3A
- Rated insulation voltage Ui: 250VAC
- Contact resistance: <15mΩ
- Degree of protection: IP00 or IP20 with terminal shroud
- Body housing: polymer thermoplastic
- Operating force:
 - KS A1-KS A4 and KS B types: 2.5N
 - KS A9 and KS C3 types: 1.5N
 - KS C1 types: 1N
 - KS C2 and KS L2: 1.3N
 - KS C9 types: 1.7N
 - KS L1 types: 6.4N
 - KS L3 types: 0.1N
- Tightening torques:
 - For M12 head fixing: 4.9-6.9Nm
 - For side screws: 0.6-1Nm
 - For terminal screws: 0.7-1Nm
- Ambient conditions:
 - Operating temperature: -25...+70°C
 - Storage temperature: -40...+70°C.

Certifications and compliance

Certifications obtained: cULus, GOST.
Compliance with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA-C22.2 n° 14.

For dimensions see page 7-25.

Foot switches



KG2 00 ...
KG2 20 ...

KR2 00 ...



KG1 10 ...

KR2 10 ...
KR2 11 ...



KGD 003 - KGD 004

- ① Direct (positive) opening action \odot ; safety function according to IEC/EN 60947-5-1.
- ② Consult Customer Service for information; see contact details on inside front cover.
- ③ A possible second contact block can be fitted; blocks with only 2 contacts in total can be used. See accessories below and contact blocks on page 7-14.

Order code Plastic body	Metal body	Model	Contacts	Qty per pkg	Wt
				n°	[kg]

ONE PEDAL FOOT SWITCHES. With free actuation.

KG1 00 S11 ③	KR1 00 S11 ③	Open	1NO+1NC Snap action ①	1	②
KG1 00 L11 ③	KR1 00 L11 ③	Open	1NO+1NC Slow action ①	1	②
KG2 00 S11 ③	KR2 00 S11 ③	With cover	1NO+1NC Snap action ①	1	②
KG2 00 L11 ③	KR2 00 L11 ③	With cover	1NO+1NC Slow action ①	1	②

With safety lever.

KG1 10 S11 ③	KR1 10 S11 ③	Open	1NO+1NC Snap action ①	1	②
KG1 10 L11 ③	KR1 10 L11 ③	Open	1NO+1NC Slow action ①	1	②
KG2 10 S11 ③	KR2 10 S11 ③	With cover	1NO+1NC Snap action ①	1	②
KG2 10 L11 ③	KR2 10 L11 ③	With cover	1NO+1NC Slow action ①	1	②
KG2 10 S22 ③	KR2 10 S22 ③	With cover	2NO+2NC Snap action ①	1	②

With pedal actuator lock.

KG1 20 S11 ③	KR1 20 S11 ③	Open	1NO+1NC Snap action ①	1	②
KG1 20 L11 ③	KR1 20 L11 ③	Open	1NO+1NC Slow action ①	1	②
KG2 20 S11 ③	KR2 20 S11 ③	With cover	1NO+1NC Snap action ①	1	②
KG2 20 L11 ③	KR2 20 L11 ③	With cover	1NO+1NC Slow action ①	1	②

With two-stage safety lever.

KG2 11 S22 ③	KR2 11 S22 ③	With cover	2NO+2NC 2-stage snap action ①	1	②
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Order code Plastic body	Metal body	Model	Contacts (for each pedal)	Qty per pkg	Wt
				n°	[kg]

TWO PEDAL FOOT SWITCHES. With safety lever on both pedals.

KGD 001 ③	KRD 001 ③	Both w/cover	1NO+1NC Snap action ①	1	②
KGD 002 ③	KRD 002 ③	Both w/cover	2NO+2NC Snap action ①	1	②

Left pedal with free actuation and right pedal with safety lever.

KGD 003 ③	KRD 003 ③	Left open Right w/cover	1NO+1NC Snap action ①	1	②
KGD 004 ③	KRD 004 ③	Left open Right w/cover	1NO+1NC Snap action ① 2NO+2NC Snap action ①	1	②

General characteristics

The KG and KR 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.

Main features are:

- Thermoplastic or metal version
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. The type without cover, open version, is instead immediately accessible and is preferred when the most important pedal operation is to stop a machine.
- Versions with safety lever
The safety mechanism prevents unintentional foot switch activation and excludes the pedal pressing 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
- Designation to IEC/EN 60947-5-1:
 - A600 Q600 for KG types
 - A300 Q300 for KR types
- Tightening torque for contacts: 1Nm/0.74lbf
- 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: <10m Ω
- Short-circuit backup protection: 10A gG fuse
- Cable connection: self-releasing screw terminal
- Housing:
 - KG types - Self-extinguishing double-insulation polymer thermoplastic
 - KR types - Aluminium-zinc alloy
- Cable entry: M20
- Ambient conditions:
 - Operating temperature: -25...+70°C
 - Storage temperature: -40...+70°C
 - Pollution degree: 3
- IEC 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 S11 S).

Certifications and compliance

Certifications obtained: EAC for foot switches and cURus for contacts only (see page 9-16 for details).
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, IEC/EN 60447.

For dimensions see page 7-26.

Accessories



KX P...

KX P03

- ④ A possible second contact block can be fitted on the left-hand pedal; blocks with only 2 contacts in total can be used. See accessories below and contact blocks on page 7-14.

Order code	Description	Qty per pkg	Wt
		n°	[kg]

Accessories.

KGX 01	Kit of elements to activate 2° contact block ④	10	0.039
KGX 02	Contact block mounting bracket	10	0.022

Cable glands and cable conduit.

KX P01	M20 cable gland	50	0.009
KX P02	PG13.5 cable gland	50	0.009
KX P03	M20 rubber cable conduit	50	0.004

General characteristics

The cable glands are in plastic with either M20 or PG13.5 thread and provide to keep the cable in place and maintain the proper IP protection of the switch after installation.

Operational characteristics for cable gland

- Material: Self-extinguishing polyamide
- IEC degree of protection: IP68
- Gland seal with cable diameter: 6...12mm/0.24"...0.47"

Certifications and compliance

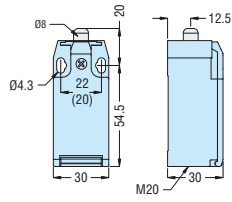
Certifications obtained: EAC.
Compliant with standards: EN 50262, UL508.

SWITCHES AND SENSORS

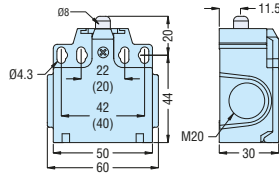
Limit switches, K series. One bottom cable entry. Dimensions to EN 50047
Two side cable entries. Dimensions compatible to EN 50047. In mm



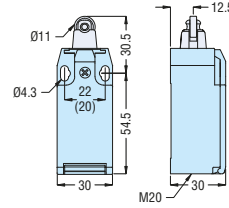
**KB A1...
KM A1...**



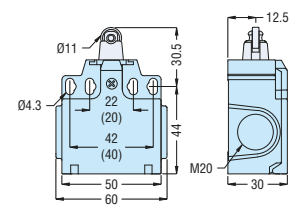
**KC A1
KN A1**



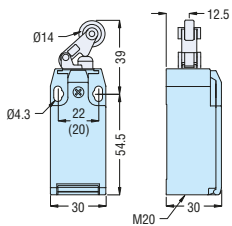
**KB B1... - KB B2...
KM B1... - KM B2...**



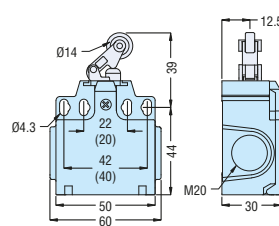
**KC B1... - KC B2...
KN B1... - KN B2...**



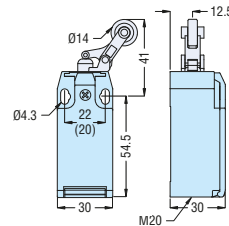
**KB C1... - KB C2...
KM C1... - KM C2...**



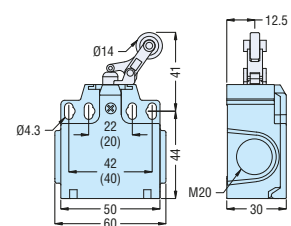
**KC C1... - KC C2...
KN C1... - KN C2...**



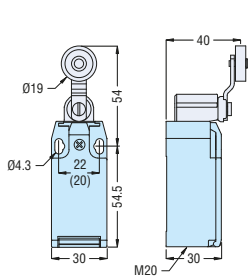
**KB D1... - KB D2...
KM D1... - KM D2...**



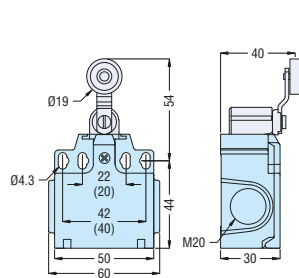
**KC D1... - KC D2...
KN D1... - KN D2...**



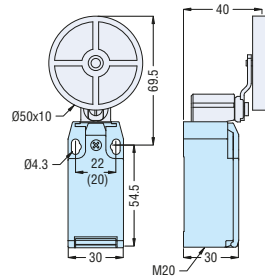
**KB E1... - KB E2...
KM E1... - KM E2...**



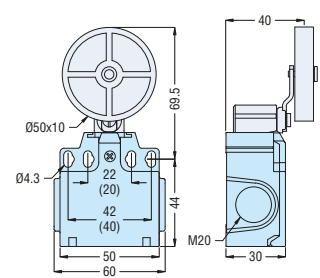
**KC E1... - KC E2...
KN E1... - KN E2...**



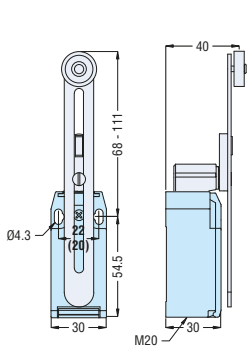
**KB E3...
KM E3...**



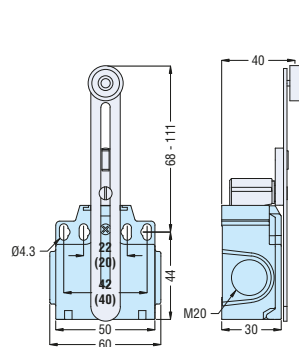
**KC E3...
KN E3...**



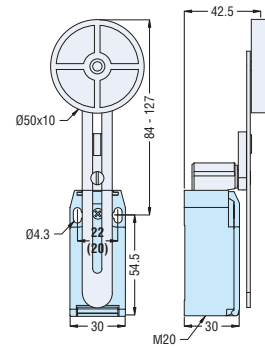
**KB F1... - KB F2...
KM F1... - KM F2...**



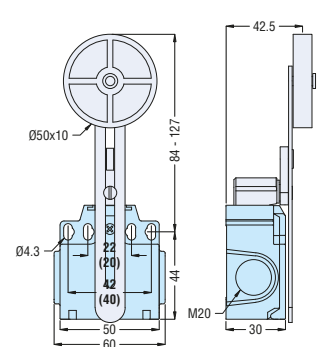
**KC F1... - KC F2...
KN F1... - KN F2...**



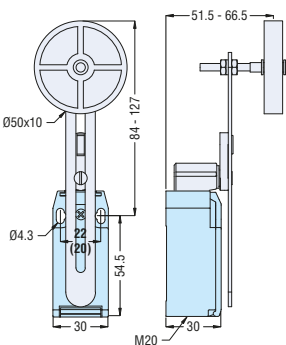
**KB F3...
KM F3...**



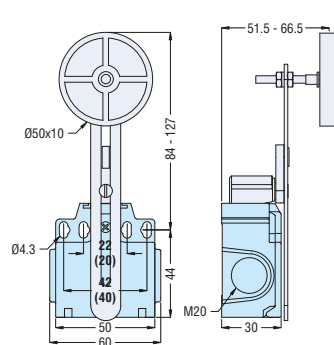
**KC F3...
KN F3...**



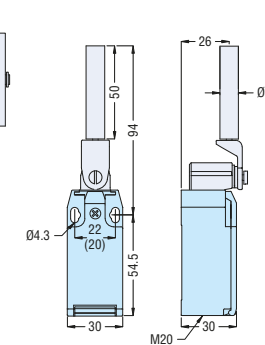
**KB F4...
KM F4...**



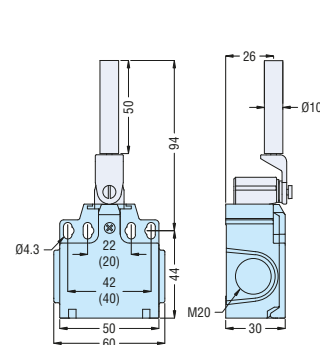
**KC F4...
KN F4...**



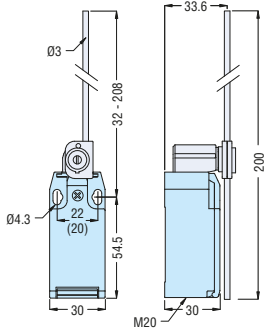
**KB H1...
KM H1...**



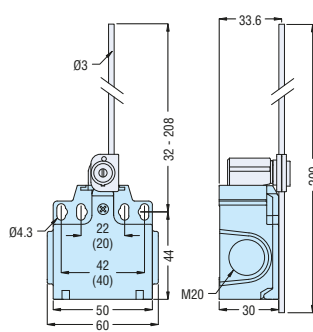
**KC H1...
KN H1...**



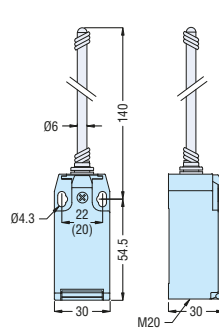
KB L1... - KB L2...
KM L1... - KM L2...



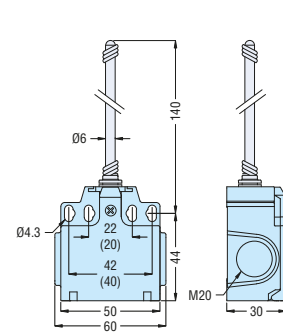
KC L1... - KC L2...
KN L1... - KN L2...



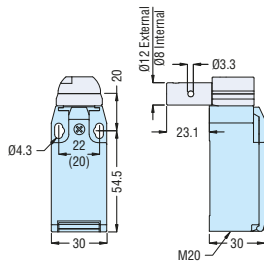
KB M1... - KB M2...
KM M1... - KM M2...



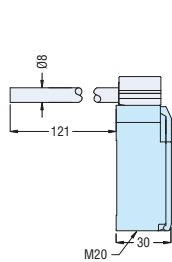
KC M1... - KC M2...
KN M1... - KN M2...



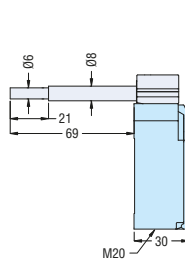
KB P1...
KM P1...



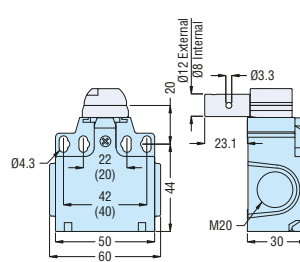
KB P2...
KM P2...



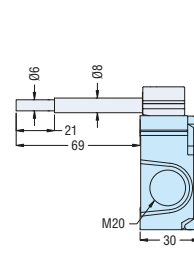
KB P3...
KM P3...



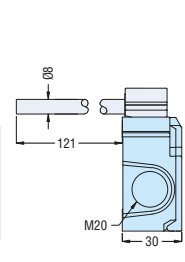
KC P1...
KN P1...



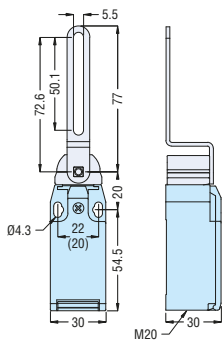
KC P2...
KN P2...



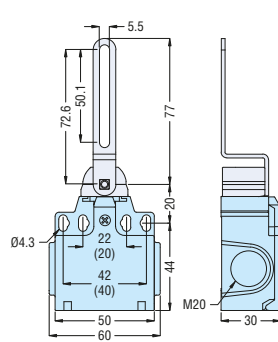
KC P3...
KN P3...



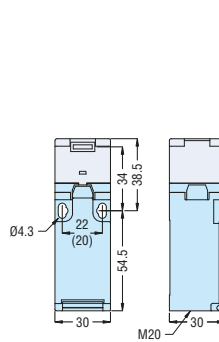
KB Q1 L...
KM Q1 L...



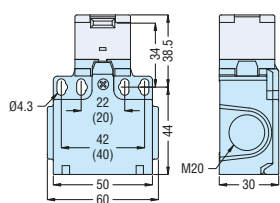
KC Q1 L...
KN Q1 L...



KB N1... - KB N2...
KM N1... - KM N2...

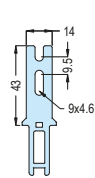


KC N1... - KC N2...
KN N1... - KN N2...

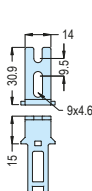


Keys

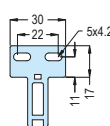
KX N1



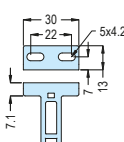
KX N2



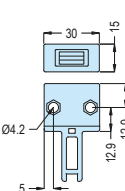
KX N3



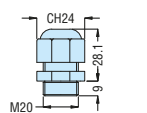
KX N4



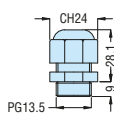
KX N5



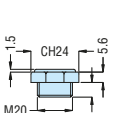
Cable glands
KX P01



KX P02



Cable conduit
KX P03



CH = Spanner/Wrench

CH = Spanner/Wrench

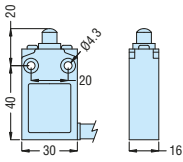
SWITCHES AND SENSORS

Prewired metal limit switches, KP types

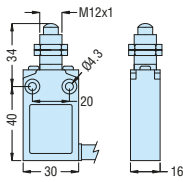
Rope-pull safety limit switches, ISO 13850 compliant. Dimensions mm (in)



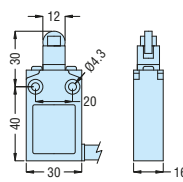
KP A1...



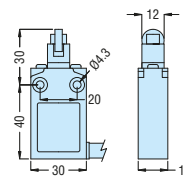
KP A2...



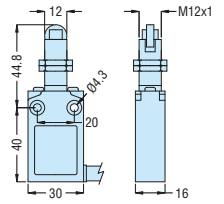
KP B1... - KP B2...



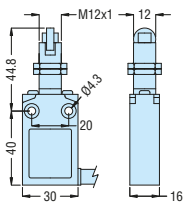
KP B3... - KP B4...



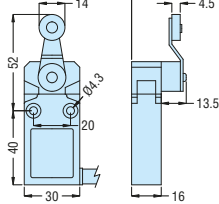
KP B5... - KP B6...



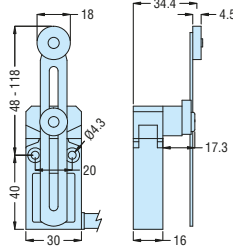
KP B7... - KP B8...



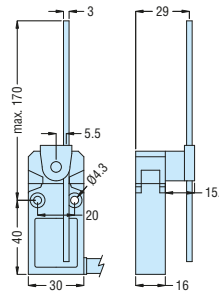
KP E1... - KP E2...



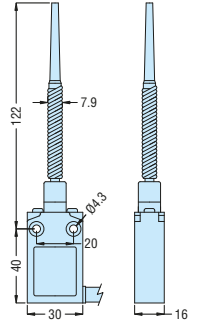
KP F1...



KP L2...

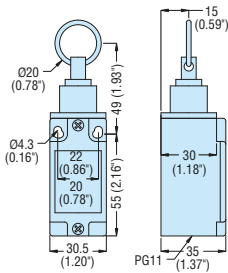


KP M2...

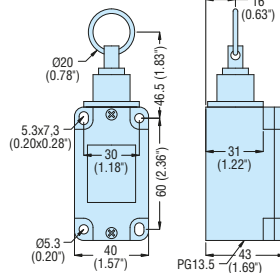


ROPE-PULL LEVER LIMIT SWITCHES FOR NORMAL STOPPING

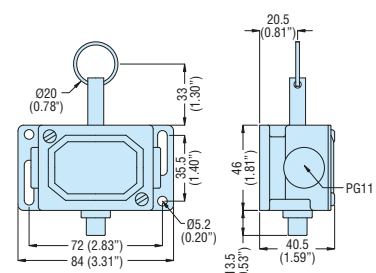
RS13 13... - RS3 13...



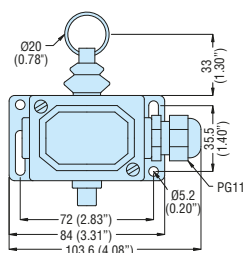
TS13 13... - TL13 13...



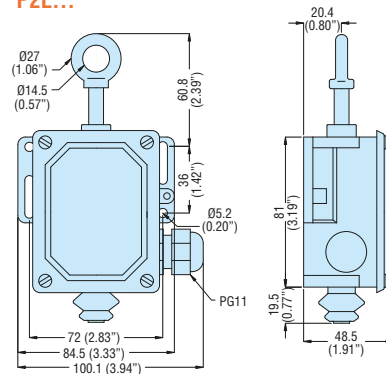
PLN...AT



PLN...ATW

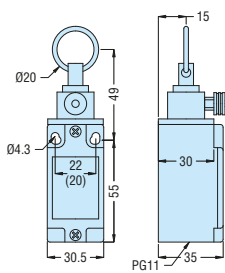


P2L...

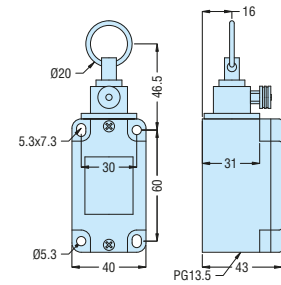


SAFETY SWITCHES

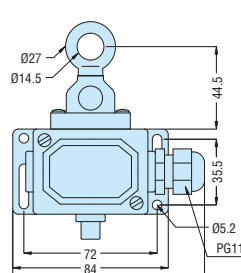
RS13 13 10



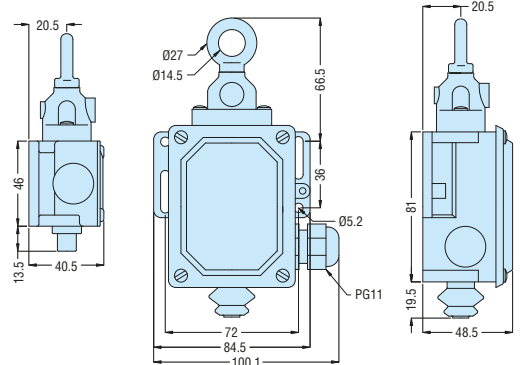
TL13 13 10



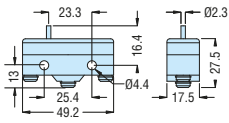
PLN13 13 11



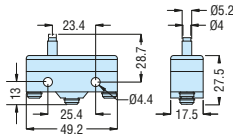
P2L 13... - P2L 15...



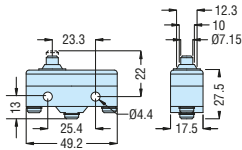
KS A1...



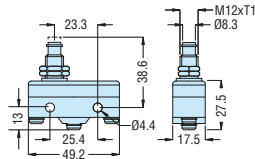
KS A2...



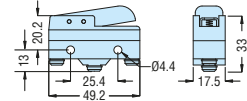
KS A3...



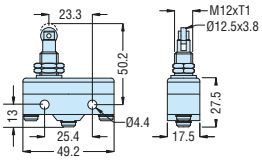
KS A4...



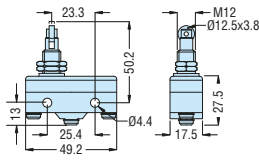
KS A9...



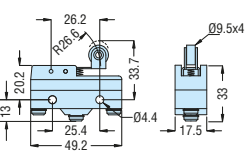
KS B1...



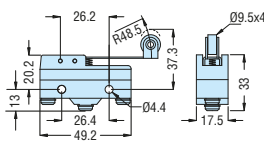
KS B2...



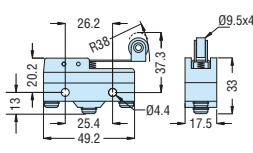
KS C1...



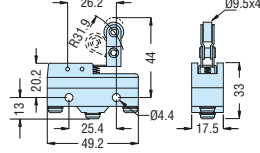
KS C2...



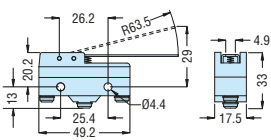
KS C3...



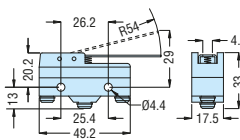
KS C9...



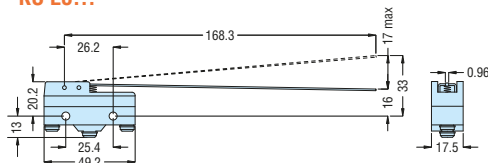
KS L1...



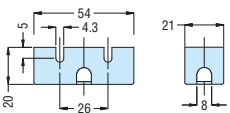
KS L2...



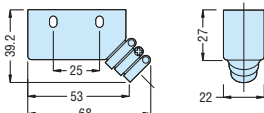
KS L3...



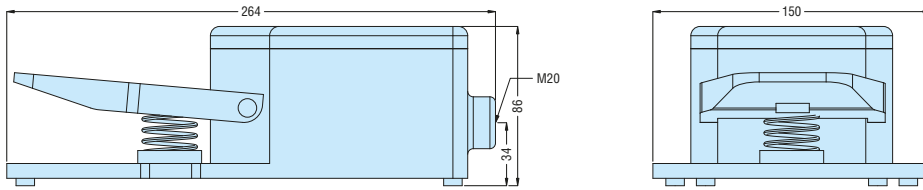
KSS C01 terminal shroud



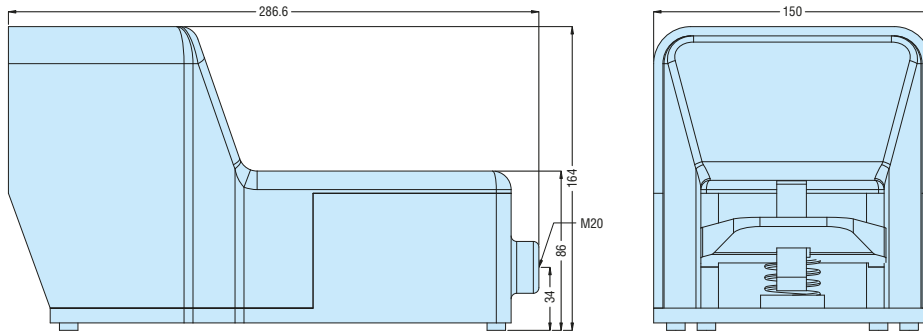
KSS CB2 terminal shroud with conduit



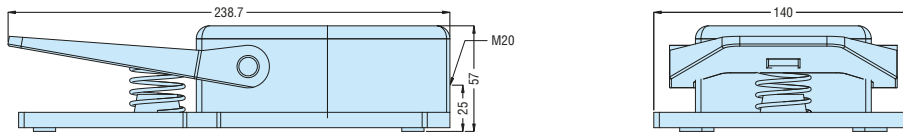
KG1



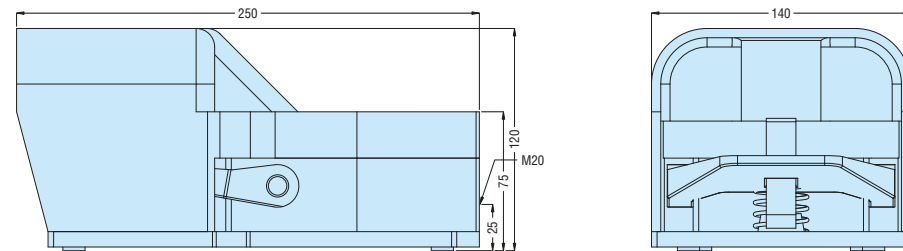
KG2



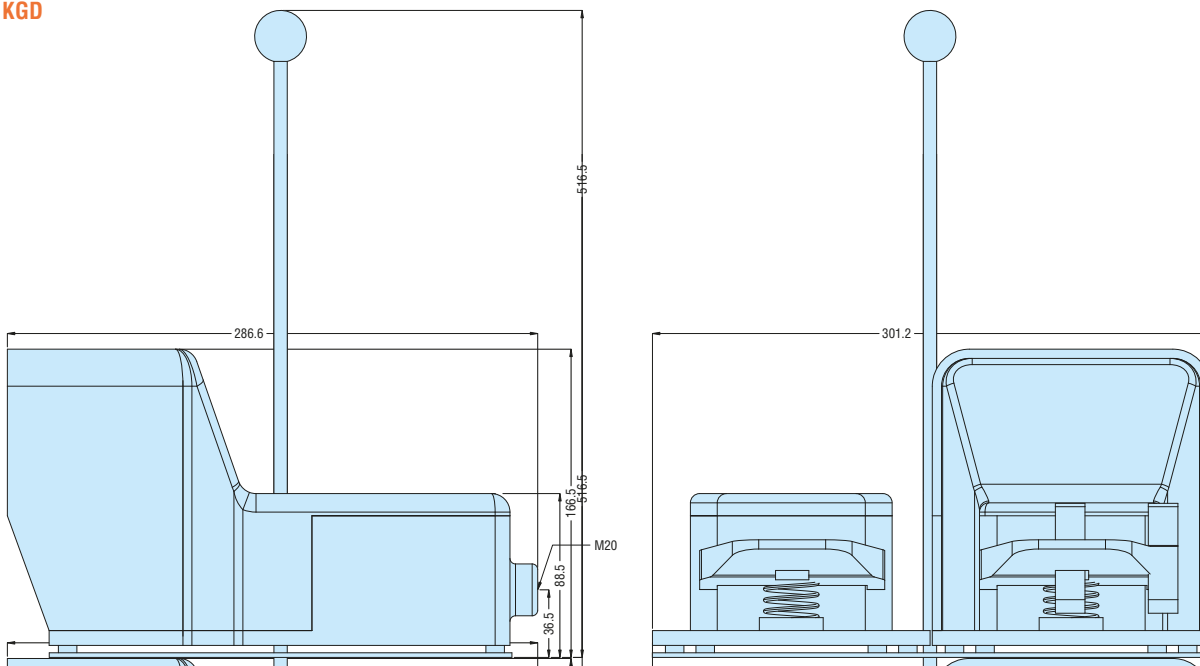
KR1



KR2

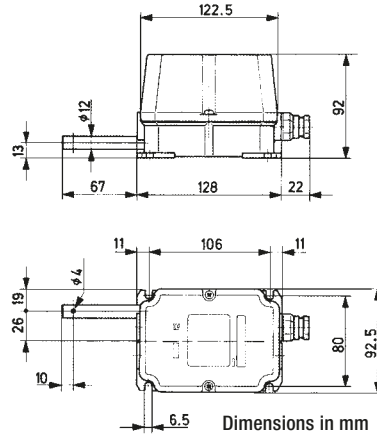


KGD



FCN series rotary limit switch

- 12 ratios from 7.5:1 to 550:1
- 2 or 4 contacts
- 4 cam profiles
- Double insulated
- IP55
- Optional multi-turn potentiometer



Specifications

Micro switches:	Type P – 1NC slow break Type D – 1NC, 1NO snap action Type MD – 1NO, 1NC slow break
Contact Rating:	3A 250VAC AC15 3A 24VDC DC13
Drive:	Worm and wheel
Cam Profiles:	A - 20° B - 45° C - 90° D- 180°
Max. Speed:	1200 rpm
Mechanical Life:	2 x 106 operations
Protection:	IP55
Operating Temp:	-20 to +60°C
Cable Entry:	1 x PG11
Weight:	0.46Kg
Construction:	Thermoplastic

Order Code (standard products)	Ratio*	No. of Switches
RAVFCN07P2#	7.5:1	2
RAVFCN07P4#	7.5:1	4
RAVFCN15P2#	15:1	2
RAVFCN15P4#	15:1	4
RAVFCN25P2#	25:1	2
RAVFCN25P4#	25:1	4
RAVFCN50P2#	50:1	2
RAVFCN50P4#	50:1	4
RAVFCN100P2#	100:1	2
RAVFCN100P4#	100:1	4
RAVFCN200P2#	200:1	2
RAVFCN200P4#	200:1	4
RAVFCN400P2#	400:1	2
RAVFCN400P4#	400:1	4

specify Cam type A, B, C, or D

Standard switches are supplied with type P (1NC slow break switches), for alternative switches substitute

P in the order code with-

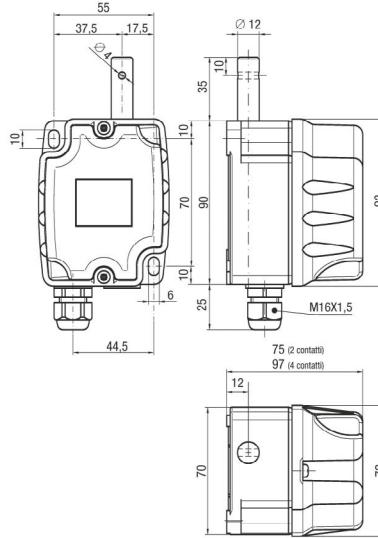
D – 1NC, 1NO snap action

MD – 1NO, 1NC slow break

*Ratio's available on request – 35:1, 60:1, 140:1, 275:1 and 550:1

FRS series rotary limit switch

- 8 ratios from 15:1 to 175:1
- 2 or 4 contacts
- 3 cam profiles
- Double insulated
- IP65



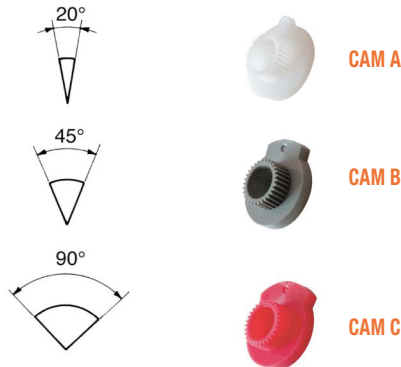
Specifications

Micro switches:	Type R – 1N0, 1NC snap action
Contact Rating:	3A 250VAC AC15 3A 24VDC DC13
Drive:	Worm and wheel
Cam Profiles:	A - 20° B - 45° C - 90°
Max. Speed:	1200 rpm
Mechanical Life:	3 x 10 ⁶ operations
Protection:	IP65
Operating Temp:	-20 to +60°C
Cable Entry:	1 x M16 x 1.5
Weight:	0.3Kg
Construction:	Thermoplastic

Order Code (standard products)	Ratio*	No. of Switches
RAVFRS15R2#	15:1	2
RAVFRS15R4#	15:1	4
RAVFRS25R2#	25:1	2
RAVFRS25R4#	25:1	4
RAVFRS50R2#	50:1	2
RAVFRS50R4#	50:1	4
RAVFRS75R2#	75:1	2
RAVFRS75R4#	75:1	4
RAVFRS100R2#	100:1	2
RAVFRS100R4#	100:1	4
RAVFRS150R2#	150:1	2
RAVFRS150R4#	150:1	4

specify Cam type A, B, C, or D

*Ratio's available on request – 35:1, and 175:1



LA series pendant switch



- Single row pendant stations
- From 2 to 12 buttons
- Wide choice of operator components
- Customised to suit individual applications
- Mechanical interlock on adjacent buttons
- Double Insulated
- IP65

Specifications

Contact Rating: lth -10A
 AC15 - 3A @ 240VAC
 10A @ 24VAC
 DC15- 5A @ 24VDC

Insulation Voltage: 660V

Max. Operating Voltage: 400VAC

Mechanical Life: 3 x 10⁶ operations

Operating Temp (°C): - 25 to + 70

Protection: IP 65

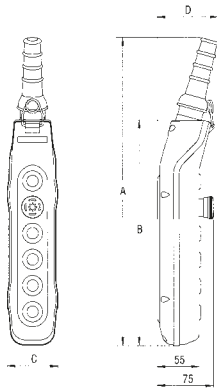
Cable Entry:
 2 - 4 buttons: rubber sleeve D. 12-17 mm
 6 - 12 buttons: rubber sleeve D. 15-20 mm

Contact Types:
 D MK01 - 1NC
 D MK10 - 1NO
 D MK02 - 2NC
 D MK20CC- 2NO simultaneous
 D MK11 - 1NC/1NO
 D MK20PR - 2NO stepped

Operator Types:
 Pushbutton - see legend
 D LAEM emergency Stop Button
 DLAPL pilot light
 D LALS lever selector 0-1
 D LALS3 lever selector 0-1-2
 D LAKS key selector 0-1-2
 D LACL blanking plate
 LOVLM2TP100 potentiometer drive (available with 5k ohm or 10k ohm potentiometer)

Order Code (standard products)	No. of Buttons	Standard Symbols (See legend)	Weight
RAVLAP2A	2	01/02	0.28Kg
RAVLAP4A	4*	30/01/02	0.43Kg
RAVLAP6A	6*	30/01/02/03/04	0.59Kg
RAVLAP8A	8*	30/01/02/05/06/03/04	0.75Kg
RAVLAP10A	10*	30/01/02/11/12/05/06/03/04	0.88Kg
RAVLAP12A	12*	30/01/02/11/12/05/06/15/16/03/04	1.04Kg

* Standard configuration includes one emergency stop operator.



N. Buttons	Dimensions (mm)				Weight (Kg.)
	A	B	C	D	
2	264	166	66	77	0,280
4	336	238	66	77	0,430
6	424	310	71	82	0,590
8	496	382	71	82	0,750
10	568	454	71	82	0,880
12	640	526	71	82	1,040

Push buttons with International Symbols

According to FEM 9.941 rules



Mito Mini Radio Control



40MI02UNXXE01



40MI11UNXXE01



40MI12UNXXE01



MINI Receiver Unit

- Configurations from 2 to 8 channels plus stop/start
- Range up to 150m
- Built in antenna
- Any receiver can be synchronized with up to 20 transmitters
- Unique identification code avoids interference from other radio sources.
- Supplied as a kit consisting of transmitter, receiver, power supply, charger and holster.

Order Code*	Description
40MI02UNXXE01	4 x general single step pushbuttons
40MI11UNXXE01	2 x general single step pushbuttons + start and stop
40MI04UNXXE02	8 x general single step pushbuttons
40MI12UNXXE01	6 x general single step pushbuttons + start and stop

*includes transmitter, receiver, battery charger and holster

Specifications

Operating range: UHF
 ISM band working frequency: 868.0125 to 869.9875 MHz
 Operating range: 150m

Transmitter
 Power supply: Li-Polymer battery
 Autonomy: Approx... 50 hrs @ 20°C
 Protection: IP67
 Dimensions: 113 x 60 x 26mm
 Weight: 100g

Receiver
 Antenna: internal or optional external
 Power supply: 9-30Vac/dc
 Consumption: ≤ 5W
 Max. current on outputs: 10A AC1 230V, 10A DC1 30V
 Max. current on stop circuit: 6.3A
 Protection: IP67
 Dimensions: 165 x 107 x 50mm
 Weight: 450g
 Construction: Thermoplastic
 Cable entry: M20

EVO Radio Control



40EVSTUNXXE01

- 6 double step pushbuttons, programmable function button plus start and emergency stop
- Range up to 100m
- Built in antenna
- Transmitter can receive and display alarms on 4 LED indicators
- Unique identification code avoids interference from other radio sources.
- Supplied as a kit consisting of transmitter, receiver, power supply, and charger.

Order Code*	Description
40EVSTUNXXE01	EVO radio control transmitter/receiver set

*includes transmitter, receiver, battery charger and holster



EVO kit



EVO Receiver Unit

Specifications

Operating range: UHF
 ISM band working frequency: 434.050 to 434,790 MHz
 Operating range: 100m
 Safety functions (to EN 13849-1): Stop protection PL d
 Protection against unintended movement PL c

Transmitter
 Power supply: Li-Polymer battery
 Autonomy: Approx... 40 hrs @ 20°C
 Protection: IP65
 Dimensions: 72 x 194 x 43mm
 Weight: 300g

Receiver
 Antenna: internal
 Power supply: 110/230Vac
 Consumption: ≤ 9 VA
 Max. current on outputs: 8A AC/13 230V, 10A DC/1 30V
 Max. current on stop circuit: 4A
 Protection: IP65
 Dimensions: 135 x 255 x 85mm
 Weight: 1.2kg
 Construction: Thermoplastic
 Cable entry: M20

Ø8mm DC

- 2mm to 3mm operating distance – shielded, unshielded
- 10-30VDC 3 wire NPN or PNP output
- Output status LED
- Cable or M12 connector
- Short circuit and reverse polarity protection
- IP67

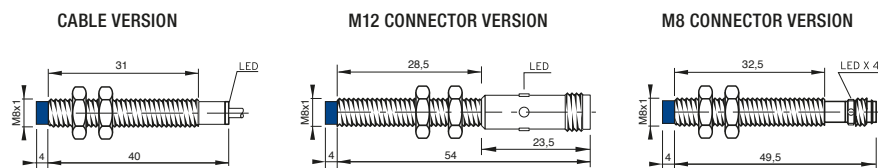


Specifications

Nominal Switching Distance (Sn):	Shielded - 2mm Non Shielded - 3mm
Nominal Voltage:	10-30VDC (-15/+10%)
Allowable Ripple:	≤10 %
Hysteresis:	<10%
Max. Output Current:	200mA
Consumption:	<10mA @ 24VDC
Saturation voltage:	<1.2V (I= 100mA)
Switching Frequency:	500Hz
Start Up Delay:	<75ms
Operating Temp (°C):	-25 to +70
Protection:	IP67
Cable Length:	2m
Housing Material:	Nickel plated brass

Order Code	Model No.	Output	Shielded	Connection
DAT95B066330	IS-08-G3-03	NPN NO	Yes	2m cable
DAT95B066370	IS-08-G1-03	PNP NO	Yes	2m cable
DAT95B066350	IS-08-G4-03	NPN NC	Yes	2m cable
DAT95B066390	IS-08-G2-03	PNP NC	Yes	2m cable
DAT95B066520	IS-08-G3-S2	NPN NO	Yes	M12
DAT95B066580	IS-08-G1-S2	PNP NO	Yes	M12
DAT95B066550	IS-08-G4-S2	NPN NC	Yes	M12
DAT95B066610	IS-08-G2-S2	PNP NC	Yes	M12
DAT95B066420	IS-08-H3-03	NPN NO	No	2m cable
DAT95B066480	IS-08-H1-03	PNP NO	No	2m cable
DAT95B066460	IS-08-H4-03	NPN NC	No	2m cable
DAT95B066500	IS-08-H2-03	PNP NC	No	2m cable
DAT95B066640	IS-08-H3-S2	NPN NO	No	M12
DAT95B066690	IS-08-H1-S2	PNP NO	No	M12
DAT95B063241	IS-08-H4-S2	NPN NC	No	M12
DAT95B063301	IS-08-H2-S2	PNP NC	No	M12

Dimensions in mm



Note: the front part in blue is valid only for unshielded models

Ø12mm DC or AC



- 4mm to 8mm operating distance – shielded, unshielded
- 10-30VDC 3 wire NPN or PNP output
- 12-30VDC 4 wire programmable
- 20-250VAC 2 wire (2mm sensing, NO flush only)
- Output status LED
- Cable or M12 connector
- Short circuit and reverse polarity protection
- IP67

Specifications

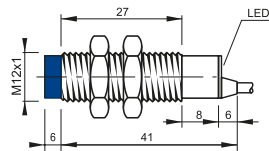
Nominal Switching Distance (Sn):	Shielded - 4mm (2mm 2 wire AC) Non Shielded - 8mm
Nominal Voltage:	3 wire 10-30VDC (-15/+10%) 4 wire 12-30VDC (-15/+10%) 2 wire 20-250VAC
Allowable Ripple:	≤10 %
Hysteresis:	<10%
Max. Output Current:	200mA (DC) 500mA (AC), min 20mA
Consumption:	<10mA @ 24VDC
Voltage drop:	<1.2V (I= 100mA)
Switching Frequency:	500Hz (DC) 25Hz (AC)
Start Up Delay:	<75mS (DC 3wire) <50mS (DC 4 wire) <300mS (AC)
Operating Temp (°C):	-25 to +70
Protection:	IP67
Cable Length:	2m
Housing Material:	Nickel plated brass

Order Code	Model No.	Supply	Output	Shielded	Connection
DAT95B063321	IS-12-G3-03	3 wire DC	NPN NO	Yes	2m cable
DAT95B063361	IS-12-G1-03	3 wire DC	PNP NO	Yes	2m cable
DAT95B063341	IS-12-G4-03	3 wire DC	NPN NC	Yes	2m cable
DAT95B063381	IS-12-G2-03	3 wire DC	PNP NC	Yes	2m cable
DAT95B063331	IS-12-G3-S2	3 wire DC	NPN NO	Yes	M12
DAT95B063371	IS-12-G1-S2	3 wire DC	PNP NO	Yes	M12
DAT95B063351	IS-12-G4-S2	3 wire DC	NPN NC	Yes	M12
DAT95B063391	IS-12-G2-S2	3 wire DC	PNP NC	Yes	M12
DAT95B063401	IS-12-H3-03	3 wire DC	NPN NO	No	2m cable
DAT95B063441	IS-12-H1-03	3 wire DC	PNP NO	No	2m cable
DAT95B063421	IS-12-H4-03	3 wire DC	NPN NC	No	2m cable
DAT95B063461	IS-12-H2-03	3 wire DC	PNP NC	No	2m cable
DAT95B063411	IS-12-H3-S2	3 wire DC	NPN NO	No	M12
DAT95B063451	IS-12-H1-S2	3 wire DC	PNP NO	No	M12
DAT95B063431	IS-12-H4-S2	3 wire DC	NPN NC	No	M12
DAT95B063471	IS-12-H2-S2	3 wire DC	PNP NC	No	M12
DAT95B067190	IS-12-E0-03	4 wire DC	NPN/PNP NO/NC	Yes	2m cable
DAT95B067210	IS-12-F0-03	4 wire DC	NPN/PNP NO/NC	No	2m cable
DAT95B067230	IS-12-E0-S2	4 wire DC	NPN/PNP NO/NC	Yes	M12
DAT95B067250	IS-12-F0-S2	4 wire DC	NPN/PNP NO/NC	No	M12
DAT95B060680	IS-12-A15-03	2 wire AC	NO	Yes	2m cable
DAT95B060690	IS-12-A15-S2	2 wire AC	NO	Yes	M12

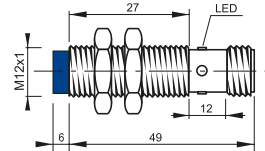
Dimensions in mm

10-30VDC 3 wire

CONFIGURATION WITH CABLE

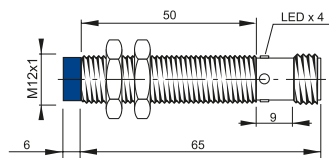
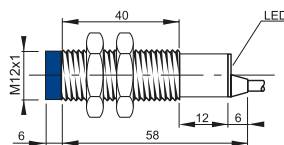


CONFIGURATION WITH CONNECTOR M12



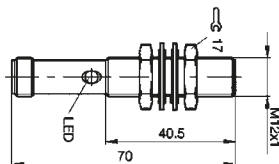
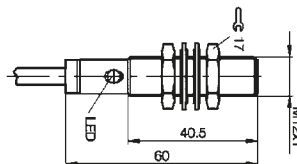
Note: the front part in white refers to non flush models

10-30VDC 4 wire programmable



Note: the front part in blue refers to non flush models.

20-250VAC 2 wire



Ø18mm DC or AC



- 8mm to 12mm operating distance – shielded, unshielded
- 10-30VDC 3 wire NPN or PNP output
- 12-30VDC 4 wire programmable
- 20-250VAC 2 wire (5mm sensing, NO flush only)
- Output status LED
- Cable or M12 connector
- Short circuit and reverse polarity protection
- IP67

Specifications

Nominal Switching Distance (Sn):	Shielded - 8mm (2mm 2 wire AC) Non Shielded - 14mm
Nominal Voltage:	3 wire 10-30VDC (-15/+10%) 4 wire 12-30VDC (-15/+10%) 2 wire 20-250VAC
Allowable Ripple:	≤10 %
Hysteresis:	<10%
Max. Output Current:	200mA (DC) 500mA (AC), min 20mA
Consumption:	<10mA @ 24VDC
Voltage drop:	<1.2V (I= 100mA)
Switching Frequency:	400Hz (DC) 25Hz (AC)
Start Up Delay:	<75mS (DC 3wire) <50mS (DC 4 wire) <300mS (AC)
Operating Temp (°C):	-25 to +70
Protection:	IP67
Cable Length:	2m
Housing Material:	Nickel plated brass

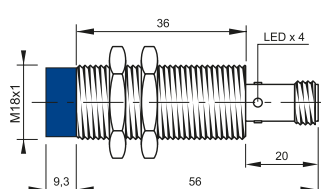
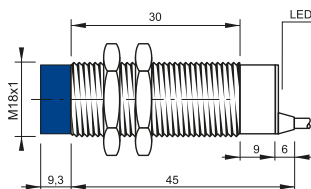
Order Code	Model No.	Supply	Output	Shielded	Connection
DAT95B063061	IS-18-G3-03	3 wire DC	NPN NO	Yes	2m cable
DAT95B063521	IS-18-G1-03	3 wire DC	PNP NO	Yes	2m cable
DAT95B063501	IS-18-G4-03	3 wire DC	NPN NC	Yes	2m cable
DAT95B063541	IS-18-G2-03	3 wire DC	PNP NC	Yes	2m cable
DAT95B063491	IS-18-G3-S2	3 wire DC	NPN NO	Yes	M12
DAT95B063531	IS-18-G1-S2	3 wire DC	PNP NO	Yes	M12
DAT95B063511	IS-18-G4-S2	3 wire DC	NPN NC	Yes	M12
DAT95B063551	IS-18-G2-S2	3 wire DC	PNP NC	Yes	M12
DAT95B063561	IS-18-H3-03	3 wire DC	NPN NO	No	2m cable
DAT95B063601	IS-18-H1-03	3 wire DC	PNP NO	No	2m cable
DAT95B063581	IS-18-H4-03	3 wire DC	NPN NC	No	2m cable
DAT95B063621	IS-18-H2-03	3 wire DC	PNP NC	No	2m cable
DAT95B063571	IS-18-H3-S2	3 wire DC	NPN NO	No	M12
DAT95B063611	IS-18-H1-S2	3 wire DC	PNP NO	No	M12
DAT95B063591	IS-18-H4-S2	3 wire DC	NPN NC	No	M12
DAT95B063631	IS-18-H2-S2	3 wire DC	PNP NC	No	M12
DAT95B067270	IS-18-E0-03	4 wire DC	NPN/PNP NO/NC	Yes	2m cable
DAT95B067290	IS-18-F0-03	4 wire DC	NPN/PNP NO/NC	No	2m cable
DAT95B067310	IS-18-E0-S2	4 wire DC	NPN/PNP NO/NC	Yes	M12
DAT95B067330	IS-18-F0-S2	4 wire DC	NPN/PNP NO/NC	No	M12
DAT95B060770	IS-18-A15-03	2 wire AC	NO	Yes	2m cable
DAT95B060780	IS-18-A15-S2	2 wire AC	NO	Yes	M12

Dimensions in mm

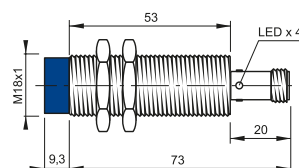
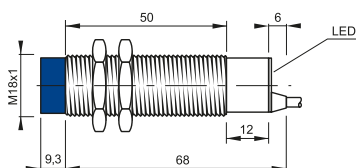
CONFIGURATION WITH CABLE

CONFIGURATION WITH CONNECTOR M12

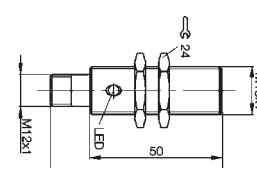
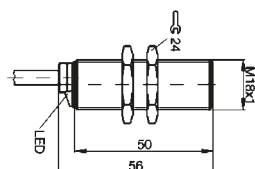
10-30VDC 3 wire



10-30VDC 4 wire programmable



20-250VAC 2 wire



Note: The front part in blue refers to non flush models

Ø30mm DC or AC



- 15mm to 20mm operating distance – shielded, unshielded
- 10-30VDC 3 wire NPN or PNP output
- 12-30VDC 4 wire programmable
- 20-250VAC 2 wire (10mm sensing, NO flush only)
- Output status LED
- Cable or M12 connector
- Short circuit and reverse polarity protection
- IP67

Specifications

Nominal Switching Distance (Sn):	Shielded - 15mm (2mm 2 wire AC) Non Shielded - 20mm
Nominal Voltage:	3 wire 10-30VDC (-15/+10%) 4 wire 12-30VDC (-15/+10%) 2 wire 20-250VAC
Allowable Ripple:	≤10 %
Hysteresis:	<10%
Max. Output Current:	200mA (DC) 500mA (AC), min 20mA
Consumption:	<10mA @ 24VDC
Voltage drop:	<1.2V (I= 100mA)
Switching Frequency:	200Hz (DC) 25Hz (AC)
Start Up Delay:	<75mS (DC 3 wire) <50mS (DC 4 wire) <300mS (AC)
Operating Temp (°C):	-25 to +70
Protection:	IP67
Cable Length:	2m
Housing Material:	Nickel plated brass

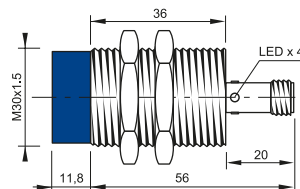
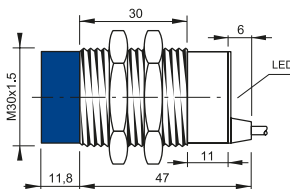
Order Code	Model No.	Supply	Output	Shielded	Connection
DAT95B063641	IS-30-G3-03	3 wire DC	NPN NO	Yes	2m cable
DAT95B063681	IS-30-G1-03	3 wire DC	PNP NO	Yes	2m cable
DAT95B063661	IS-30-G4-03	3 wire DC	NPN NC	Yes	2m cable
DAT95B063701	IS-30-G2-03	3 wire DC	PNP NC	Yes	2m cable
DAT95B063651	IS-30-G3-S2	3 wire DC	NPN NO	Yes	M12
DAT95B063691	IS-30-G1-S2	3 wire DC	PNP NO	Yes	M12
DAT95B063671	IS-30-G4-S2	3 wire DC	NPN NC	Yes	M12
DAT95B063711	IS-30-G2-S2	3 wire DC	PNP NC	Yes	M12
DAT95B063721	IS-30-H3-03	3 wire DC	NPN NO	No	2m cable
DAT95B063761	IS-30-H1-03	3 wire DC	PNP NO	No	2m cable
DAT95B063741	IS-30-H4-03	3 wire DC	NPN NC	No	2m cable
DAT95B063781	IS-30-H2-03	3 wire DC	PNP NC	No	2m cable
DAT95B063731	IS-30-H3-S2	3 wire DC	NPN NO	No	M12
DAT95B063771	IS-30-H1-S2	3 wire DC	PNP NO	No	M12
DAT95B063751	IS-30-H4-S2	3 wire DC	NPN NC	No	M12
DAT95B063791	IS-30-H2-S2	3 wire DC	PNP NC	No	M12
DAT95B067350	IS-30-E0-03	4 wire DC	NPN/PNP NO/NC	Yes	2m cable
DAT95B067370	IS-30-F0-03	4 wire DC	NPN/PNP NO/NC	No	2m cable
DAT95B067390	IS-30-E0-S2	4 wire DC	NPN/PNP NO/NC	Yes	M12
DAT95B067410	IS-30-F0-S2	4 wire DC	NPN/PNP NO/NC	No	M12
DAT95B060810	IS-30-A15-03	2 wire AC	NO	Yes	2m cable
DAT95B060820	IS-30-A15-S2	2 wire AC	NO	Yes	M12

Dimensions in mm

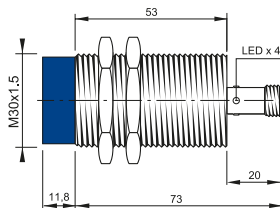
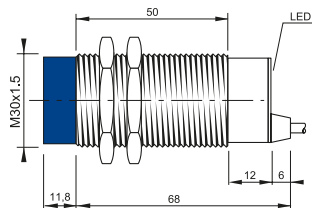
CONFIGURATION WITH CABLE

CONFIGURATION WITH CONNECTOR M12

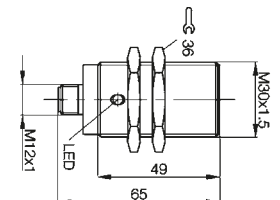
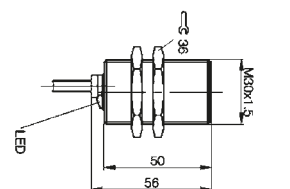
10-30VDC 3 wire



12-30VDC 4 wire programmable

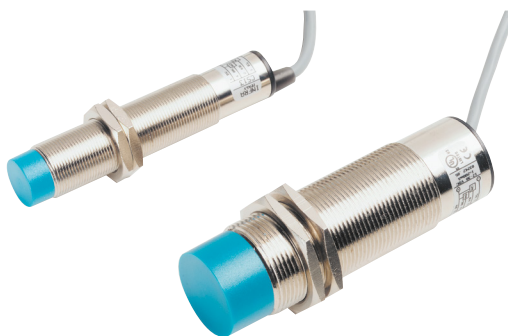


20-250VAC 2 wire



Note: The front part in blue refers to non flush models

Ø18mm or 30mm



- 5mm to 25mm operating distance – shielded, unshielded
- 10-30VDC 4 wire NPN or PNP output
- Output status LED
- Cable or M8 connector
- Short circuit and reverse polarity protection
- IP67

Specifications

Nominal Switching Distance (Sn):

Shielded -

1-5mm (Ø18mm)
1-15mm (Ø30mm)

Non Shielded -

1-10mm (Ø18mm)
1-25mm (Ø30mm)

Nominal Voltage:

3 wire 10-30VDC (-15/+10%)
4 wire 12-30VDC (-15/+10%)
2 wire 20-250VAC

Allowable Ripple:

≤10 %

Hysteresis:

depends on sensing distance

Max. Output Current:

200mA (DC)

Consumption:

500mA (AC), min 20mA

Voltage drop:

<1.8V

Switching Frequency:

10Hz

Start Up Delay:

<100mS

Operating Temp (°C):

-25 to +70

Protection:

IP67

Cable Length:

2m

Housing Material:

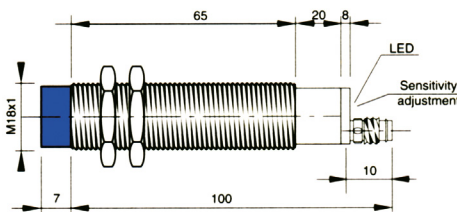
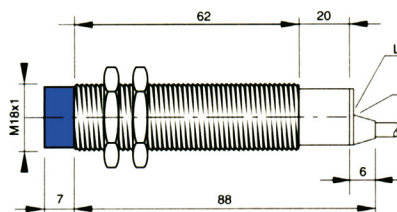
Nickel plated brass

Order Code	Model No.	Diameter	Supply	Output	Shielded	Connection
DAT958901160	CS07	18mm	4 wire DC	NPN NO-NC	Yes	2m cable
DAT958901020	CS08	18mm	4 wire DC	PNP NO-NC	Yes	2m cable
DAT958901000	CS07K2	18mm	4 wire DC	NPN NO-NC	Yes	M8
DAT958901040	CS08K2	18mm	4 wire DC	PNP NO-NC	Yes	M8
DAT958901100	CS13	18mm	4 wire DC	NPN NO-NC	No	2m cable
DAT958901120	CS14	18mm	4 wire DC	PNP NO-NC	No	2m cable
DAT958901250	CS13K2	18mm	4 wire DC	NPN NO-NC	No	M8
DAT958901270	CS14K2	18mm	4 wire DC	PNP NO-NC	No	M8
DAT958901180	CS09	30mm	4 wire DC	NPN NO-NC	Yes	2m cable
DAT958901060	CS10	30mm	4 wire DC	PNP NO-NC	Yes	2m cable
DAT958901230	CS09K2	30mm	4 wire DC	NPN NO-NC	Yes	M8
DAT958901080	CS10K2	30mm	4 wire DC	PNP NO-NC	Yes	M8
DAT958901200	CS15	30mm	4 wire DC	NPN NO-NC	No	2m cable
DAT958901140	CS16	30mm	4 wire DC	PNP NO-NC	No	2m cable
DAT958901300	CS15K2	30mm	4 wire DC	NPN NO-NC	No	M8
DAT958901330	CS16K2	30mm	4 wire DC	PNP NO-NC	No	M8

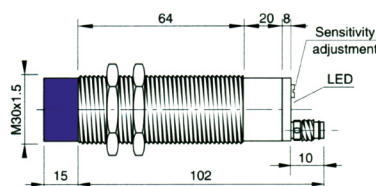
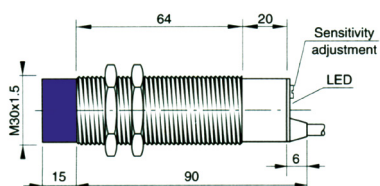
CONFIGURATION WITH CABLE

CONFIGURATION WITH CONNECTOR K

18mm 4 wire DC



30mm 4 wire DC



Dimensions in mm

Note: The front part in blue refers to non shielded models

Square Housing



- Thru-beam, retro-reflective or diffuse reflective versions
- 10-30VDC 4 wire NPN or PNP output
- Output status LED's
- Trimmers for sensitivity and distance adjustment
- Cable or M12 connector
- Short circuit and reverse polarity protection
- IP67

Order Code	Model No.	Function	Supply	Output	Connection
DAT956201470	S60-PA-2-C01-NN	diffuse proximity	DC	NPN NO-NC	2m cable
DAT956201310	S60-PA-2-C01-PP	diffuse proximity	DC	PNP NO-NC	2m cable
DAT956201190	S60-PA-5-C01-NN	diffuse proximity	DC	NPN NO-NC	M12
DAT956201050	S60-PA-5-C01-PP	diffuse proximity	DC	PNP NO-NC	M12
DAT956201480	S60-PA-2-C11-NN	Long diffuse proximity	DC	NPN NO-NC	2m cable
DAT956201320	S60-PA-2-C11-PP	Long diffuse proximity	DC	PNP NO-NC	2m cable
DAT956201200	S60-PA-5-C11-NN	Long diffuse proximity	DC	NPN NO-NC	M12
DAT956201110	S60-PA-5-C11-PP	Long diffuse proximity	DC	PNP NO-NC	M12
DAT956201500	S60-PA-2-M08-NH	Background suppression*	DC	NPN NO	2m cable
DAT956201350	S60-PA-2-M08-PH	Background suppression*	DC	PNP NO	2m cable
DAT956201220	S60-PA-5-M08-NH	Background suppression*	DC	NPN NO	M12
DAT956201080	S60-PA-5-M08-PH	Background suppression*	DC	PNP NO	M12
DAT956201090	S60-PA-5-N03-PH	foreground suppression*	DC	PNP NO	M12
DAT956201560	S60-PL-2-B01-NN	Laser retro-reflective	DC	NPN NO-NC	2m cable
DAT956201410	S60-PL-2-B01-PP	Laser retro-reflective	DC	PNP NO-NC	2m cable
DAT956201260	S60-PL-5-B01-NN	Laser retro-reflective	DC	NPN NO-NC	M12
DAT 956201120	S60-PL-5-B01-PP	Laser retro-reflective	DC	PNP NO-NC	M12
DAT956201460	S60-PA-2-B01-NN	polarised retro-reflective	DC	NPN NO-NC	2m cable
DAT956201300	S60-PA-2-B01-PP	polarised retro-reflective	DC	NPN NO-NC	2m cable
DAT956201180	S60-PA-5-B01-NN	polarised retro-reflective	DC	NPN NO-NC	M12
DAT956201040	S60-PA-5-B01-PP	polarised retro-reflective	DC	NPN NO-NC	M12
DAT956201530	S60-PA-2-T51-NN	retro-reflective for transparent	DC	NPN NO	2m cable
DAT956201380	S60-PA-2-T51-PP	retro-reflective for transparent	DC	PNP NO	2m cable
DAT956201250	S60-PA-5-T51-NN	retro-reflective for transparent	DC	NPN NO	M12
DAT956201100	S60-PA-5-T51-PP	retro-reflective for transparent	DC	PNP NO	M12
DAT956201490	S60-PA-2-F01-NN	Thru-beam receiver	DC	NPN NO-NC	2m cable
DAT956201330	S60-PA-2-F01-PP	Thru-beam receiver	DC	PNP NO-NC	2m cable
DAT956201210	S60-PA-5-F01-NN	Thru-beam receiver	DC	NPN NO-NC	M12
DAT956201060	S60-PA-5-F01-PP	Thru-beam receiver	DC	PNP NO-NC	M12
DAT956201340	S60-PA-2-G00-XG	Thru-beam emitter	DC	-	2m cable
DAT956201070	S60-PA-5-G00-XG	Thru-beam emitter	DC	-	M12

*with dark/light configuration input

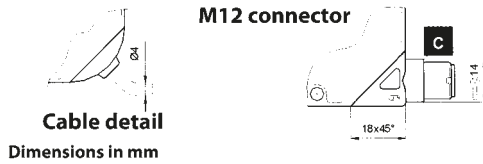
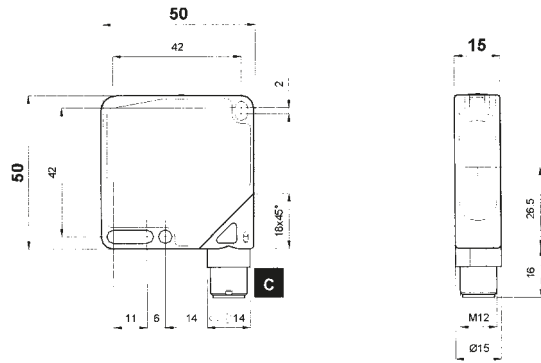
Specifications

Power Supply:	10-30VDC
Consumption:	Max 50mA
Light emission:	Infrared LED 880nm (C11 & F01) Red LED 660nm (PA-B01, C01 & T51) Red LED 670nm (M08 & N03) Red Laser 650 nm (PL-B01)
Through beam operating distance:	0 to 20m
Retro-reflective operating distance:	0.1 to 2m (transparent objects) 0.1 to 8m (on R5) (polarised) 0.0 to 20m (Laser version)
Diffuse reflective operation distance:	1 to 100cm (C01 version) 5 to 200cm (C11 version) 7 to 20cm (M08 version) 7 to 18cm (N03 version)
Setting:	Sensitivity trimmer Teach-In Push button, remote on cable (M08 & N03 versions)
Indicators:	Yellow output LED (All models) Green stability LED (B01, C01, C11, F01 versions) Green power on LED (F01) Green/Red Ready/Error LED (M08 & N03)
Output type:	NPN/PNP configurable
Max. Output Current:	100mA
Switching Frequency:	1kHz max, 500Hz max (F01), 2kHz (PL-B01)
Operating mode:	dark/light configurable
Operating Temp (° C):	-25 to +55
Protection:	IP67
Cable Length:	2m
Housing Material:	ABS and PMMA plastic lens
Weight:	40g (M12 version), 90g (cable version)

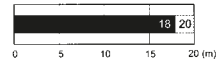
See next page for dimension and detection diagrams

Square Housing

Dimensions

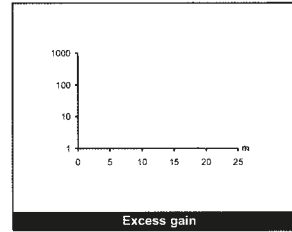


Detection diagrams

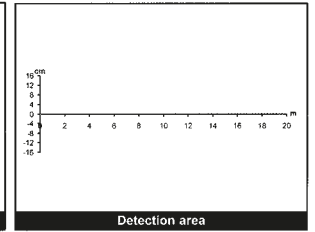


■ Recommended operating distance
Maximum operating distance

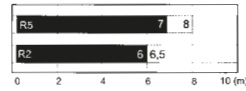
560-xx-x-F01-xx Thru Beam



Excess gain



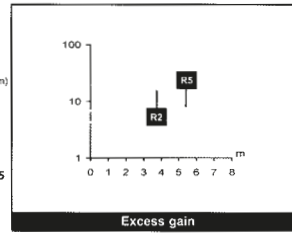
Detection area



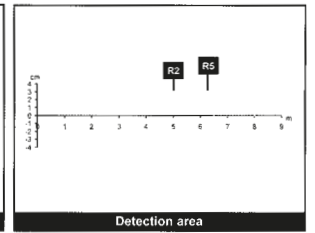
■ Recommended operating distance
Maximum operating distance

High efficiency reflectors can be used to obtain larger operating distances.
Contact our customer service 1800 252 995

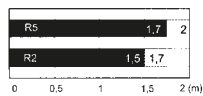
560-xx-x-B01-xx Polarised Retroreflective



Excess gain

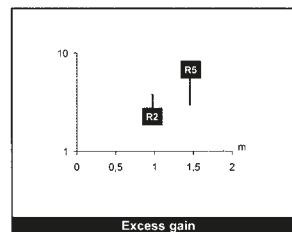


Detection area

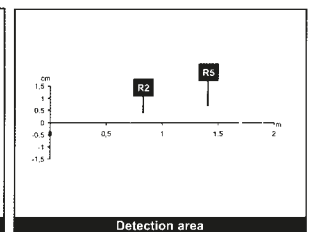


■ Recommended operating distance
Maximum operating distance

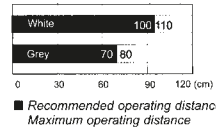
560-xx-x-T51-xx Retroreflective for transparents



Excess gain

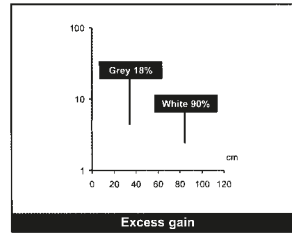


Detection area

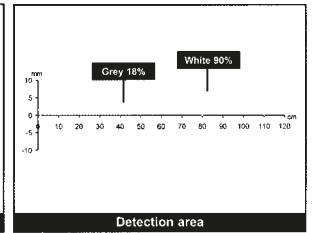


■ Recommended operating distance
Maximum operating distance

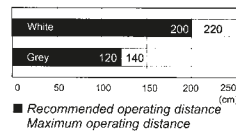
560-xx-x-C01-xx Diffuse proximity



Excess gain

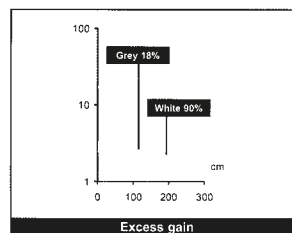


Detection area

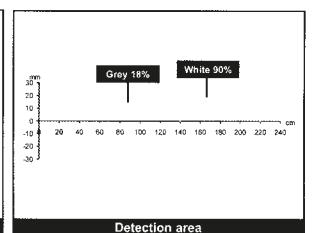


■ Recommended operating distance
Maximum operating distance

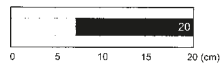
560-xx-x-C11-xx Long Diffuse Proximity



Excess gain

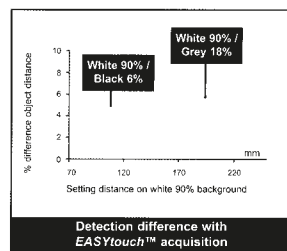


Detection area

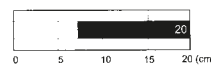


■ Operating distance

560-xx-x-M08-xx Background suppression

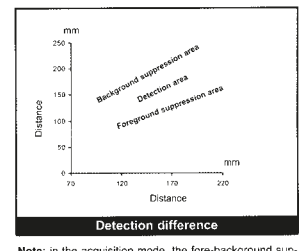


Detection difference with EASYtouch™ acquisition

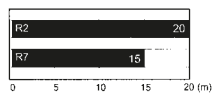


■ Operating distance

560-xx-x-N03-xx Fore-Background suppression



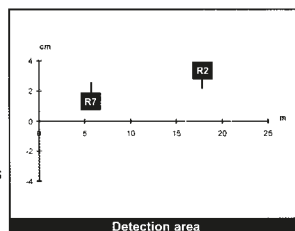
Note: in the acquisition mode, the fore-background suppression points are programmable



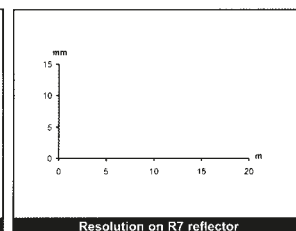
■ Operating distance

High efficient reflectors can be used to obtain larger operating distances.
Contact our customer service 1800 252 995

560-PL-x-B01-xx Retroreflective with laser



Detection area



Resolution on R7 reflector

M18 Cylindrical Housing



- Thru-beam, retro-reflective, diffuse reflective sensors
- 10-30VDC 4 wire NPN or PNP output
- Output status LED's
- Trimmers for sensitivity and distance adjustment
- Cable or M12 connector
- Short circuit and reverse polarity protection
- IP66
- Optional laser light source
- Optional plastic housing
- Optional radial optics
- Optional back-ground and foreground suppression or polarized versions

Order Code	Model No.	Function	Output	Connection
DAT952021540	S50-MA-2-F01-NN	Thru-beam receiver axial	NPN	2m cable
DAT952021050	S50-MA-2-F01-PP	Thru-beam receiver axial	PNP	2m cable
DAT952021060	S50-MA-2-G00-XG	Thru-beam emitter	-	2m cable
DAT952021700	S50-MA-5-F01-NN	Thru-beam receiver axial	NPN	M12
DAT952021250	S50-MA-5-F01-PP	Thru-beam receiver axial	PNP	M12
DAT952021260	S50-MA-5-G00-XG	Thru-beam emitter	-	M12
DAT952022090	S50-MA-2-A00-NN	retro-reflective axial	NPN	2m cable
DAT952022080	S50-MA-2-A00-PP	retro-reflective axial	PNP	2m cable
DAT952022110	S50-MA-5-A00-NN	retro-reflective axial	NPN	M12
DAT952022100	S50-MA-5-A00-PP	retro-reflective axial	PNP	M12
DAT952021520	S50-MA-2-C10-NN	Diffuse short range axial	NPN	2m cable
DAT952021020	S50-MA-2-C10-PP	Diffuse short range axial	PNP	2m cable
DAT952021680	S50-MA-5-C10-NN	Diffuse short range axial	NPN	M12
DAT952021220	S50-MA-5-C10-PP	Diffuse short range axial	PNP	M12
DAT952022130	S50-MA-2-C21-NN	Diffuse standard range axial	NPN	2m cable
DAT952022120	S50-MA-2-C21-PP	Diffuse standard range axial	PNP	2m cable
DAT952022150	S50-MA-5-C21-NN	Diffuse standard range axial	NPN	M12
DAT952022140	S50-MA-5-C21-PP	Diffuse standard range axial	PNP	M12
DAT952021510	S50-MA-2-C01-NN	Diffuse long range axial	NPN	2m cable
DAT952021010	S50-MA-2-C01-PP	Diffuse long range axial	PNP	2m cable
DAT952021670	S50-MA-5-C01-NN	Diffuse long range axial	NPN	M12
DAT952021210	S50-MA-5-C01-PP	Diffuse long range axial	PNP	M12

Specifications

Power Supply: 10-30VDC (NPN/PNP version)
Tru-beam 35mA (emitter), 30mA (receiver)
Consumption: Retro-reflective infrared LED 880nm

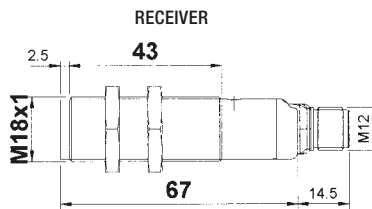
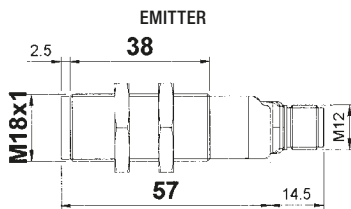
Light emission:
Through beam operating distance: 0 to 30m
Retro-reflective operating distance: 0.1 to 5m
Diffuse reflective operation distance: 0 to 10cm (short C10)
 0 to 40cm (standard C21)
 0 to 70cm (long C01)

Setting: sensitivity trimmer
Indicators: yellow output LED
 green stability LED (diffuse versions)
 green power on LED (Thru-beam versions)
Output type: NPN or PNP NO and NC
Max. Output Current: 100mA (DC)
Switching Frequency: Thru beam 250Hz
 Retro-reflective and diffuse 1kHz

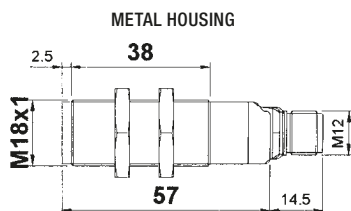
Response time: Thru-beam 2ms
 Retro-reflective and diffuse 0.5ms

Operating mode: dark on NO/light on NC
Operating Temp (°C): -25 to +55
Protection: IP65
Cable Length: 2m
Housing Material: nickel plated brass
Weight: 75g (M12 version), 110g (cable version)

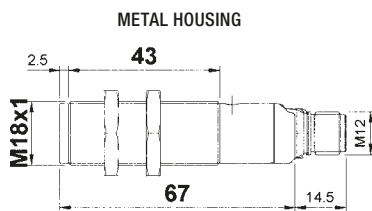
Thru-Beam Emitter and Receiver



Retro-reflective and diffuse reflective



C21 and C01 diffuse reflective



Dimensions in mm

See next page for detection diagrams

M18 Cylindrical Housing

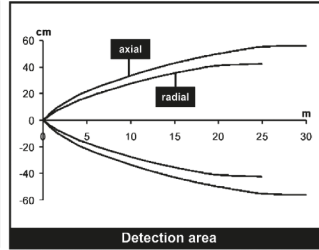
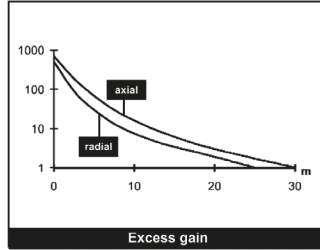


Detection diagrams

Thru-beam

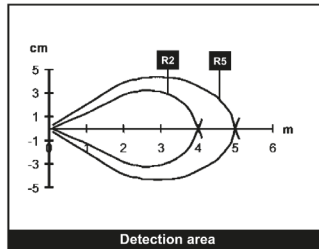
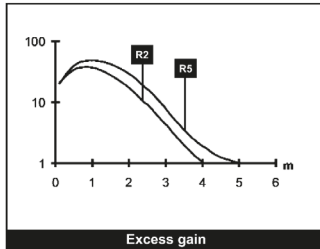
axial	25	30
radial	20	25

■ Recommended operating distance
 ■ Maximum operating distance



axial on R2	4
axial on R5	5

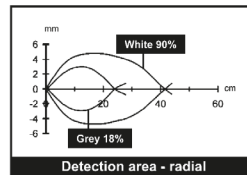
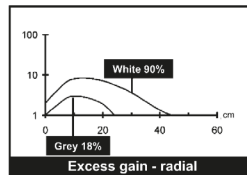
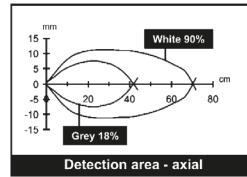
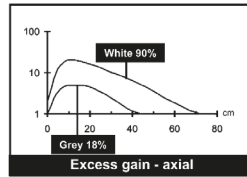
■ Operating distance



C10 diffuse reflective

axial	60	70
radial	35	40

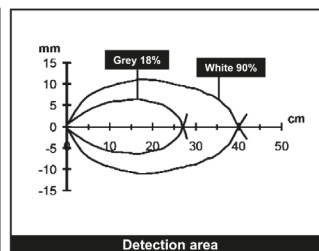
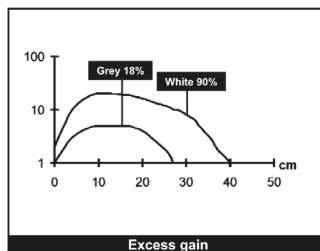
■ Recommended operating distance
 ■ Maximum operating distance



C21 diffuse reflective

	35	40
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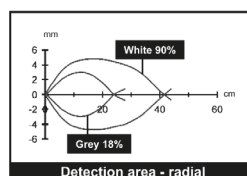
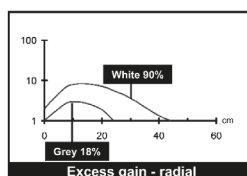
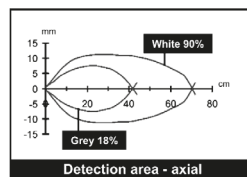
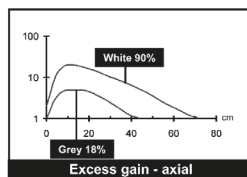
■ Recommended operating distance
 ■ Maximum operating distance



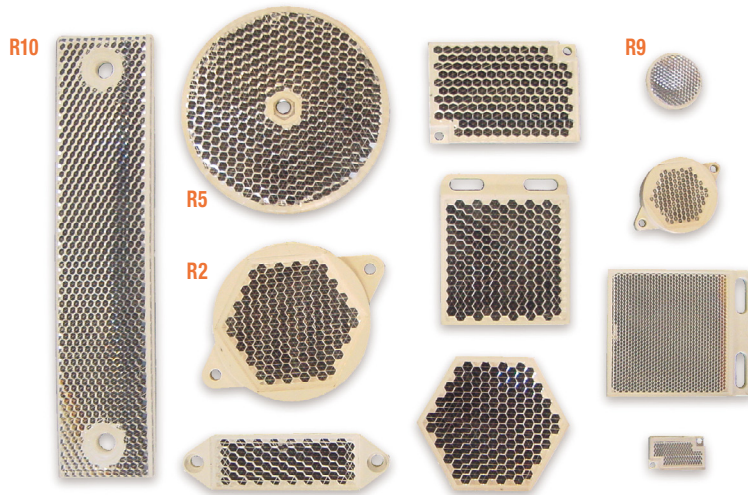
C01 diffuse reflective

axial	60	70
radial	35	40

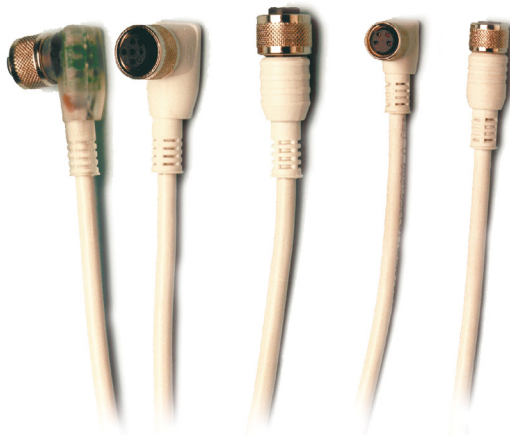
■ Recommended operating distance
 ■ Maximum operating distance



Accessories Inductive and Photo-Electric Sensors



Order Code	Model No.	Function
DATG5085002	CS-A1-02-B-NC	M12 4-pole axial female connector
DATG5085003	CS-A2-02-B-NC	M12 4-pole radial female connector
DAT95A251430	CS-B1-02-G-05	M8 4-POLE NO-NC axial connector 5M cable
DAT95A251270	CS-A1-02-G-05	M12 4-POLE NO-NC axial connector 5M cable
DAT95A251240	CS-A2-02-G-05	M12 4-POLE NO-NC radial connector 5M cable
DAT95ACC3050	DEV90	DEV90 90° ray turner for M18 photoelectric sensors
DAT95A151080	R9	Ø23mm prismatic reflector with Ø25MM self-adhesive support
DATS940700075	R5	Ø75mm prismatic reflector with Ø82mm support
DATS940700048	R2	Ø48mm prismatic reflector with Ø63mm support
DATS19120000	R10	36 X 176mm prismatic reflector with 41 X 181mm support
DAT95ACC3340	ST1218	ST1218 Brackets M12/M18 sensors
DAT95ACC3350	ST1830	ST1830 Brackets M18/M30 sensors



ROE Rotary Optical Encoders

- Solid and hollow shaft versions
- Resolution up to 5000ppr
- Choice of outputs (A, B and Z open collector is standard)
- IP 40 (IP65 on some versions)
- 7-24VDC supply

Specifications

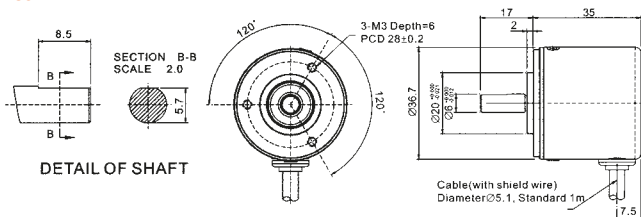
Power Supply:	7-24VDC ±5%
Sink Current:	20mA
Source Current:	20mA (ETA only)
Max Load Volts:	30V (not applicable to ETA)
Output Signal:	A, B, & Z
Response Frequency:	300kHz max
Current Consumption:	100mA
Max Speed:	6000rpm (ES,EH) 3000rpm (ETA)
Operating Temperature:	-10 to +70°C



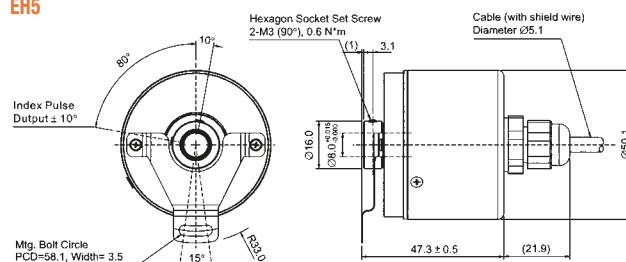
Order Code	Type	Pulses/revolution (PPR)	Output Type	IP Rating	Shaft Size	Housing Ø
DEVES301CN6941	ES3	100ppr	Open Collector	IP40	Solid 6mm	36.6mm
DEVES302CN6941	ES3	200ppr	Open Collector	IP40	Solid 6mm	36.6mm
DEVES302CN6965	ES3	200ppr	Open Collector	IP65	Solid 6mm	36.6mm
DEVES30CCN6941	ES3	360ppr	Open Collector	IP40	Solid 6mm	36.6mm
DEVES305CN6941	ES3	500ppr	Open Collector	IP40	Solid 6mm	36.6mm
DEVES311CG6941	ES3	1024ppr	Open Collector*	IP40	Solid 6mm	36.6mm
DEVES50CCN8965	ES5	360ppr	Open Collector	IP65	Solid 8mm	50mm
DEVES505PU6961	ES5	500ppr	Push-pull	IP65	Solid 8mm	50mm
DEVES510CN8965	ES5	1000ppr	Open Collector	IP65	Solid 8mm	50mm
DEVEH502CN8965	EH5	200pp	Open Collector	IP65	Hollow 8mm	50mm
DEVETA11PNM941	ETA	1024ppr	Push-pull	IP40	Hollow 30mm	100mm

*A, B & Z (Z gated with A & B)

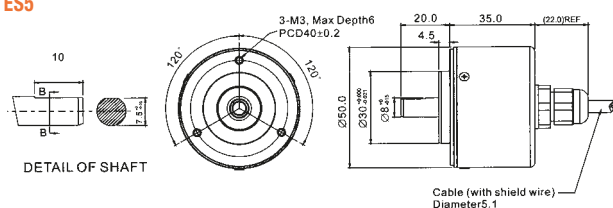
ES3



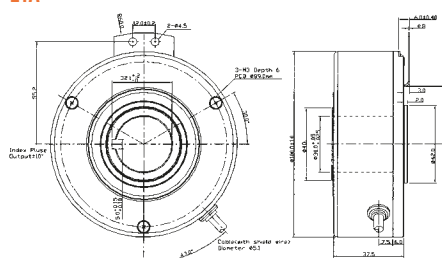
EH5



ES5



ETA



Dimensions in mm

WE Series Wheel Encoders

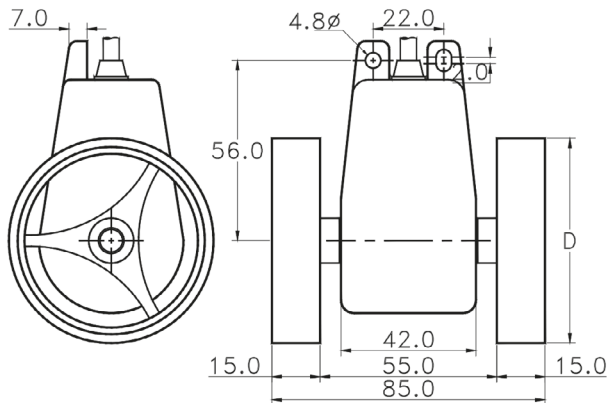
- Speed or length measurement using contact wheel
- Resolution 10mm and 1mm/pulse
- Single or two phase NPN+PNP output
- IP65
- 10-30Vdc supply



Specifications

Power Supply:	10-30VDC
Current consumption:	30mA
Output:	NPN+PNP A and B phase on two phase version
Output current:	150mA max.
Response Frequency:	2 kHz (WE-M3), 10 kHz (WE-M4T)
Max Speed:	6000rpm (WE-M3), 3000rpm (WE-M4T)
Operating Temperature:	-20 to +60° C

Order Code	Type	Pulses/revolution (PPR)	Output Type	Weight
FOTWEM3	WE-M3	20ppr (10mm/revolution)	NPN + PNP 1phase	0.525kg
FOTWEM4T	WE-M4T	200ppr (1mm/revolution)	Open Collector	0.525kg



Meter Wheel : D = 63.69 mm

Yard Wheel : D = 58.24 mm

Unit : mm